DOCUMENT RESUME

ED 279 616 SP 028 492

TITLE Secondary Education for the Future. Report of a Forum Meeting on New Trends and Processes of Secondary Education (Port Moresby, Papua New Guinea, November 17-December 4, 1985).

INSTITUTION United Nations Educational, Scientific, and Cultural Organization, Bangkok (Thailand). Regional Office for Education in Asia and the Pacific.

PUB DATE 86

NOTE 95p.

AVAILABLE FROM BERNAN-UNIPUB, 4611-F Assembly Drive, Lanham, MD 20706.

PUB TYPE Reports - Descriptive (141) -- Collected Works - Conference Proceedings (021)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS *Curriculum Development; *Educational Innovation; *Foreign Countries; International Cooperation; Non Western Civilization; Program Development; *Secondary Education

ABSTRACT

A number of countries in Asia and the Pacific are moving from a predominantly agricultural economy to industrialization, thus creating different expectations of secondary schools. The forum described provided the opportunity to reach certain consensus on the directions of secondary education; develop alternative objectives of secondary education; and identify issues, innovative practices, and growth points. The first chapter of this monograph provides an overview of the concerns and events which led to the meeting and its agenda. In chapter 2, the papers outlining new trends and processes in secondary education in each of the participating countries are summarized. Chapter 3 reports the results of the review of studies made in the light of recommendations of the Task Force Meeting in Indonesia. The discussions on the development of alternative objectives of new models of secondary education are reported in chapter 4. In chapter 5, the implications in terms of development of alternative objectives of secondary education, the identification of issues to be addressed, and innovative practices and growth points are outlined. New curricula, training strategies, evaluation, and instructional materials are discussed in chapter 6, on the implementation of new models. Finally, suggestions for followup activities, to be carried out both nationally and cooperatively, are outlined in chapter 7. Appended are the agenda and lists of participants, documents, and innovative practices and experiments in the participating countries. (JD)

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Asia and the Pacific Programme
of Educational Innovation
for Development

SP028 492

SECONDARY EDUCATION FOR THE FUTURE

UNESCO
Regional Office for Education
in Asia and the Pacific
Bangkok, 1986

Forum Meeting on New Trends and Processes of Secondary Education, Port Moresby, 27 November-4 December 1985.
Secondary education for the future; report of the Forum organized by Unesco Regional Office for Education in Asia and the Pacific in collaboration with the Department of Education, Ministry of Education, Papua New Guinea. Bangkok, Unesco, 1986.
85 p. (Asia and the Pacific Programme of Educational Innovation for Development)

1. SECONDARY EDUCATION – ASIA/PACIFIC. 2. SECONDARY SCHOOL CURRICULUM – ASIA/PACIFIC. 3. SECONDARY EDUCATION – VOCATIONAL TRAINING – ASIA/PACIFIC. I. Unesco. Regional Office for Education in Asia and the Pacific. II. Papua New Guinea. Ministry of Education. Department of Education. III. Title. IV. Series.

373.5

APEID

Asia and the Pacific Programme
of Educational Innovation
for Development

SECONDARY EDUCATION FOR THE FUTURE

Report of a Forum Meeting on
New Trends and Processes of Secondary Education

Port Moresby – Papua New Guinea
27 November to 4 December 1985

UNESCO
Regional Office for Education
in Asia and the Pacific
Bangkok, 1986

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Published by the
Unesco Regional Office for Education in Asia and the Pacific
P.O. Box 1425, General Post Office
Bangkok 10500, Thailand

Printed in Thailand

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BKA/85/OPE/932-1200

PREFACE

The context within which secondary education is taking place has dramatically changed. The universalization of primary education in most countries is resulting in rapidly increasing numbers of students prepared and expecting to enter secondary schools. Rising standards of living and increased government assistance are making it financially feasible for large numbers of students to attend high schools. No longer are all those who receive secondary education planning to go on to university. In fact an increasing proportion are leaving school to enter non-professional sectors of the work force while many will not gain any employment. Alternative objectives of secondary education are required to meet the needs of these students.

These factors, together with technological changes, are causing all countries to undertake the restructuring of secondary education. Moreover owing to economic, social and political changes which are taking place, a number of countries in Asia and the Pacific are moving from a predominantly agricultural economy to industrialization with manufacturing sector playing a vital role. This means the occupational infrastructure is expanding with demands for skilled manpower at the professional, technical, supervisory and production levels. These changes have been creating different expectations of secondary schools. Alternative models of secondary education are required to cope with their needs.

The Forum on New Trends and Processes of Secondary Education organized in collaboration with the Department of Education, Ministry of Education at Port Moresby from 27 November to 4 December 1985 provided the opportunity to reach certain concensus on the directions of secondary education, develop alternative objectives of secondary education and identify issues, innovative practices and growth points.

It is hoped that the document produced will provide useful directions for the development of secondary education.

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INTRODUCTION

The Forum on New Trends and Processes of Secondary Education was organized by the Asia and the Pacific Programme of Educational Innovation for Development (APEID), Unesco Regional Office for Education in Asia and the Pacific (ROEAP), Bangkok, in collaboration with the Department of Education, Ministry of Education, Papua New Guinea. The meeting was held in Port Moresby from 27 November to 4 December 1985.

The Forum built upon the results of a Task Force Meeting held in Indonesia in July 1984, the outcome of which has been published under the title of "In Search of New Models of Secondary Education".

The objectives of the Forum were to:

i) review national policies and plans in respect of structural and substantive changes in secondary education in the region;

ii) review studies, made in the light of the recommendation of the Task Force, and develop a conceptual framework of new models of secondary education;

iii) develop alternative objectives of secondary education, identify issues related to secondary education and identify innovative practices and growth points; and

iv) explore curricula, training strategies, monitoring and evaluation initiatives, and available instructional materials for implementing and renewal of new models.

The Forum was attended by ten participants from eight Member States, namely Australia, India, Malaysia, New Zealand, Papua New Guinea, Philippines, Republic of Korea and Thailand. The list of participants is to be found in Annex II.

Inauguration

The meeting was formally opened by Mr G Roakeina, the Secretary, Department of Education, Ministry of Education, Papua New Guinea. He expressed his appreciation of the opportunity that the Forum provided for member nations, including Papua New Guinea, to consider the form which secondary education might assume in the next 20 years.

Election of Officers

In the first plenary session, the participants elected Mr A Neuendorf (Papua New Guinea) as Chairman, Dr R P Singhal (India) as Vice-Chairman, and Professor C N Power (Australia) as Rapporteur.

Organization and procedures

The Forum started with presentation and discussion on papers and national plans and policies in secondary education in each of the participating countries. Next, studies undertaken in the light of the recommendations of the Task Force were reviewed and a conceptual framework of new models of secondary education developed during days Two and Three (Thursday and Friday 28 to 29 November). On Day Four (Saturday 30 November), the focus was on the third objective and on Day Five (Monday 2 December) the fourth objective (curriculum, training and evaluation initiatives) became the centre of discussion.

On the sixth day (3 December) suggestions for follow-up activities and country plans were drawn up and the draft report prepared. The final day was devoted to the consideration of the draft report.

Outcomes

The following report is one of the outcomes of the Forum. It provides a general account of what transpired, together with an outline of the issues covered and conclusions reached. The report is organized in chapters.

First, a general introduction provides an overview of the concerns and events which led to the Forum and to its agenda. Second, the papers outlining new trends and processes in secondary education in each of the participating countries are summarised. Chapter Three reports the results of the review of studies made in the light of the recommendation of the Task Force Meeting in Indonesia. The discussions on the development of conceptual framework of new models of secondary education are reported in Chapter Four.

In Chapter Five, the implications in terms of development of alternative objectives of secondary education, the identification of issues to be addressed and innovative practices and growth points are outlined.

The discussion of new curricula, training strategies, evaluation and instructional materials initiatives is reported in Chapter Six. Finally, suggestions for follow-up activities, both nationally and co-operatively, are outlined in Chapter Seven.

Chapter One

OVERVIEW

The Ninth Regional Consultation Meeting of the Asia and the Pacific Programme of Educational Innovation for Development (Bangkok, 20-26 March, 1984) provided the opportunity for the countries participating to present major educational policy trends and developments, with particular reference to those with which APEID might find linkages. At that meeting, "New Models of Secondary Education" was identified as one of major priority concerns and new activity for 1984 to 1986.

Past emphasis in countries participating in APEID in restructuring secondary education was focused on the introduction of vocational courses into the secondary curriculum. In many countries in the region, the changes underway are much broader in scope. New models and objectives for secondary education are being planned, but no generally accepted model has evolved.

Secondary schools in many countries face pressing problems. In most systems, secondary education is linked to the demands of university entrance, but only a minority gain entry to the universities. Yet to be worked out are the appropriate balances between preparation for higher education, work and citizenship; between general education and vocational training: between core studies and specialisation; between cognitive and non-cognitive objectives.

Restructuring the secondary cycle should also take into account the need for scientific creativity, technological expertise and greater understanding of the nature and impact of social and technological change.

The participants of the Consultation Meeting took the view that each country will have to design, implement and improve new structures, curricula and learning methods on a continuing basis to be aligned with the major structural transformations underway in the modern world.

The participants of the Ninth Regional Consultation Meeting felt that the present model which is linked to university curriculum needs provides the majority of the expanded population of secondary schools with a partial and inadequate secondary education. Remedial measures may require an appropriate "vocationalization" of general education balanced with an appropriate curriculum core. It was suggested that the proportionate balance in different curriculum elements may vary between junior and senior segments of the secondary cycle and in terms of each country's specific needs and resource availability.

It was also agreed that not only was it desirable that secondary school students at each stage be able to find work and employment, but that they should

acquire an appropriate range of concepts, values, skills and attitudes enabling them to be useful citizens of the society.

The systematic and planned development of appropriate attitudes to work and work experience as well as social and moral development should be reflected in the core curriculum of the secondary cycle. Restructuring the secondary curriculum should also take into account scientific and technological changes. In particular, new information technologies (especially microcomputers and communication technology) have already had a substantial impact on the content of the curriculum, the teaching-learning process and even the purposes of education. The participants of the Consultation Meeting took the view that such elements will demand the innovative exploration of new models of secondary education.

In the continuous development of new structures, curricula and methods, the co-operation and support of all sections of the community (including the rural sector) is necessary so that secondary schools are responsive to the changing needs of the community. At the same time, the new structures and models developed will need to be flexible enough to accommodate the educational needs of different abilities, backgrounds and plans, and schools serving different types of communities.

Clearly the successful development and implementation of new models will need to be supported by adequate teacher training, curriculum materials and other resources.

Moreover, planning of new policies and programmes for secondary education should take into account experience and the findings of evaluation studies which have focussed on the problems and weaknesses of previous attempts to re-organize secondary education.

A Task Force Meeting on Co-operative Development of New Models of Secondary Education was held from 26-31 July, 1984 in Jakarta, Indonesia. The Report of the Meeting *(In Search* of *New* Models of *Secondary Education,* UNESCO – Bangkok, 1985) examines major trends and issues in secondary education and innovative models of secondary education in the participating countries, and develops schemes for planning, evaluation and future co-operative action.

The major trends identified by the Task Force meeting were:

1. Restructuring the overall pattern of education, including secondary education, following the recommendations of planning Commissions and Inquiries;

2. Emphasis on increasing the social relevance of secondary education in the light of economic, social and technological changes;

3. Curriculum modernization and reform stemming from (1) and (2);

4. Linking education with productivity and economic development; and

5. Human resources development in order to raise the efficiency and effectiveness of personnel.

6. Planning and management of the education system as the key to maximizing the effectiveness of the scarce resources and facilities available.

Having examined innovative models emerging in the Republic of Korea, Thailand and India, the Report presents a scheme for assessing needs, establishing objectives, systematic planning, implementation and evaluation.

The participants of the Consultation Meeting saw a need, therefore, for countries involved in the restructuring and re-orientation of their secondary education systems to establish a network of centres and projects aimed at developing alternative models of secondary education to suit their critical needs, to exchange ideas and experiences, and co-operatively develop curricula and exemplary materials.

The programme on New Models of Secondary Education is thus aimed at the co-operative development of a conceptual framework of emerging new models of secondary education by the participating countries.

The plan for co-operative action listed seven activities, including –

a) the preparation of in-depth case studies of innovative projects related to particular aspects of secondary education; and

b) a regional workshop/forum on the development of a conceptual framework of new models of secondary education.

The Forum was expected to build on the results of the 1984 Task Force Meeting held in Jakarta which had identified innovative models of secondary education and made suggestions for appraising these models and for further co-operative action. In particular, it was considered essential that the Forum review studies on new models of secondary education prepared in response to the 1984 Task Force Meeting and, even more importantly, work towards the development of a conceptual framework of new models of secondary education.

Chapter Two

POLICIES AND PLANS OF SECONDARY EDUCATION IN THE COUNTRIES

Participants in the Forum were required to prepare a conceptual paper on the development of new models of secondary education. Each paper was to:

i) review national policies and plans in respect of structural and substantive changes in secondary education, and to develop a conceptual framework of new models of secondary education;

ii) develop alternative objectives of secondary education, identify issues, related innovations and growth points; and

iii) explore curricula, training strategies, monitoring and evaluation initiatives, and available instructional materials for implementing and renewal of new models.

A brief outline is given of the most significant structural and substantive changes in secondary education currently being undertaken in each country. This is followed by a summary of the major changes in each country and a reflection on issues.

AUSTRALIA

In Australia, each of the six states and the Northern Territory has its own school system, while the Commonwealth is responsible for schooling in the Australian Capital Territory. However, the Commonwealth government also makes special purpose grants to state and non-government schools through the Schools Commission. NSW and Victoria have basically a 6 + 6 system, ACT and Tasmania a 6 + 4 + 2 system and the rest, a 7 + 5 system.

There is a broad agreement in Australia that secondary schools should provide for the development of individuals and of an efficient, productive and enlightened community. As such, the provision of a full, comprehensive secondary education for all young people has become a central goal of state and Commonwealth governments. Specifically, the Commonwealth through its Participation and Equity Programme, is seeking to raise significantly the percentage of students staying on to year 12 (currently 41 per cent retention).

If the overall retention rate is to be increased, the form of secondary schooling provided must be more accessible and attractive to students who leave early and to disadvantaged groups within Australia (such as Aboriginals, students in rural areas, non-English speaking and low income groups). There is particular concern about the high rate of unemployment among early school leavers (51

per cent for 15 year olds) and young people in general (21 per cent for 15-19 year olds). It is also believed that technological changes mean that students need to be better educated if they and the nation are to successfully adapt to the challenges of the future.

In addition to retaining students in secondary education for a longer time, there is a conern to reduce alienation and rejection by restructuring secondary schools and curricula in ways which are more closely aligned with the needs of students and the society. The emergence of a new and more flexible system of post-compulsory education seems to be underway. The task of secondary education in Australia is no longer that of preparing a selective few for higher level tasks and the majority for clerical work or semi-skilled production. Rather it is that of providing an education for all as responsible citizens who can contribute in productive work and as individuals who can develop their cultural interests in a satisfying way. This implies a more open role for schools; linking their work with the community; seeking deliberately to foster and develop continuity, meaning and responsibility for their students; and recognising the value of experience-based learning.

The establishment of new structures which are designed to match the needs and developmental stage of students has contributed to an improvement in quality of life in a significant number (though a minority) of schools. In particular, studies of the Secondary Colleges in the ACT, Alternative Programmes in Upper Secondary Schools and Schools within Schools suggest that secondary students respond favourably to structures which are less bureaucratic, more flexible, linked to adult and community life and supportive of students.

There are also moves to improve the transition between primary and secondary school and to develop more flexible links between secondary schools and the tertiary sector.

Ideas such as continuity, unity and meaning are beginning to assume greater significance for the curriculum. It recognised that while schools cannot solve social problems, they should prepare people to play an intelligent and informed role in society. The 1985 Report of the Quality of Education Review Committee placed considerable emphasis on the development of the competences needed if students are to use knowledge and skills to serve individual and community purposes. In particular it stressed such competences as acquiring and conveying information and those needed for practical and group tasks and various roles in society (work place, community, ongoing education, personal roles).

The various Committees of Inquiry established by the states have recommended a framework for curriculum reform which emphases a common set of core curriculum components (Language and Communication, Social Studies, Mathematics, Science and Technology, Vocational and Personal Awareness, Creative and Practical Arts, Physical and Health Education). There has also been a trend towards more flexible arrays of modular courses, all of which aim at preparing young people for multiple roles in society in the K-10 period, and new forms and arrangements for the post-compulsory phase which provide for a greater diversity of choice and specialisation.

Secondary education for the future

Changing conceptions of what secondary schools are for in Australia are being reflected in the emergence of new assessment authorities at the upper secondary level. These authorities incorporate representatives of both the providers (Education Departments, non-government schools) and the consumers (employers, governments, unions, technical colleges, Colleges of Advanced Education and Universities) as well as the community generally, rather than just the Universities. The emphasis in assessment has moved from solely external, norm-referenced examinations towards internal, moderated assessment and criterion-referenced assessment systems.

The reconstruction of secondary education in Australia is becoming a co-operative effort involving participation between government, the profession and the public, with the profession playing a significant role in contributing to the debate on the purposes and form of education in the 21st century; in developing structures, curricula and processes for achieving these purposes; and in generating better ways of reporting the outcomes of education to parents and the wider community.

INDIA

India is currently engaged in reformulating its educational policy. In a document recently brought out by the Ministry of Human Resource Development (this is a new name given to the Ministry; earlier it was Ministry of Education) under the title "Challenge of Education – A Policy perspective" (1985), a lot of emphasis has been laid on greater relevance of secondary education curriculum to the needs of the society and the world of work. It has stressed the need to vocationalise secondary education.

According to the National Policy of Education (1968), efforts have been made in the past to restructure school education by introducing a 10 + 2 pattern in the country. Earlier, completion of higher secondary education took 11 years. The new 10 + 2 pattern has led to increasing the duration of secondary education by one year. Consequently, the courses, under the new system, were modernized. The Ten-year school curriculum consisted of general education providing for an undifferentiated curriculum which included study of three languages, social studies, sciences (physical and biological), mathematics, physical and health education, and work-experience (which was later changed into Socially-Useful, Productive Work). The higher secondary (or Senior Secondary or Plus Two, as it is also generally called) stage provided for diversified curriculum leading to specialisation in humanities, sciences or commerce. It also provided for vocational studies as electives by those who wished to opt for the same.

It has, however, been observed that only a few (nine states and four Union Territories out of 22 states and nine Union Territories have so far introduced vocational courses in higher secondary schools (classes XI and XII). The number of students who offer such courses is only around 60,000 all over the country; the coverage in the vocational stream accounts for only 2.7 per cent of the total enrolment in plus two (as in 1983-1984), whereas it had been envisaged by the Education

Commission in 1966 that nearly 50 per cent of the students who join class XI will branch off to vocational courses, the duration of which will be of one to three years.

An urgent review of the structure of secondary education in India is, therefore, called for. There is a serious concern about the present state of affairs as the objective of linking school education with the world of work has not been achieved.

The new policy perspective, thus, gives not only a new thrust to the need to strengthen the vocationalisation of higher secondary education (post-ten stage), but also provides a new dimension by suggesting that vocational courses should be made available even after class VIII, which is the end of the elementary stage of education. Further, vocational courses are not to be limited to engineering and technical vocation, but include courses in agriculture, business and commerce, health and paramedical services, home science, etc.

Yet, another shift in the new perspective is in favour of preparing students for self-employment and unorganised sectors of the work-force. Hitherto, the preparation was mainly for the organised sector which employs only 10 per cent of the total work force.

The proposed change is expected to meet the sub-professional needs of the various professions at secondary and tertiary levels.

The Secondary Education, therefore, hence forward has to fulfil its new responsibility of closely linking itself with work, be instrumental in raising productivity of the people and thereby help in the national development.

The Socially-Useful Productive Work, which hitherto was intended to inculcate proper attitudes in students towards work, may now have a prevocational bias.

The new model also envisages that strong linkages will have to be established between schools and places of work so that facilities for practical training are available.

Apart from the strong emphasis on introducing education and work right from the lower secondary stage, the new policy and plans will have to pay special attention to removal of imbalances that exist by way of rural-urban, male-female differences and children belonging to privileged and under-privileged classes of the society. The programmes for secondary education for girls and weaker sections would need to be strengthened with particular focus on rural areas.

The participation rate in India at the secondary stage is, at present, about 25 per cent of that age group. Owing to the pressures generated by the programme of universal elementary education and due to greater awareness in the masses about the value of education, secondary education in India will continue to expand in the coming years. The expansion, as well as modernisation, of secondary education will need adoption of non-conventional approaches.

Secondary education for the future

Already in 1984, India has launched a massive T.V. programme throughout the country. The use of this technology for secondary education, the provision of open learning system, and the introduction of computer-aided instruction are some of the new directions in which the country is fast moving. The Open school of India has proved to be one of the successful innovations in the field of non-formal education at the secondary stage and it has gained considerable support in the Seventh Five-Year Plan (1985-1990) which has just been launched.

MALAYSIA

Malaysia has embarked upon a review of the entire primary and secondary curricula. In 1979, a Cabinet Committee Review on Education saw the need for such an exercise, mainly because a large proportion of secondary pupils found the existing secondary curricula heavy in content and very demanding. Besides, curricular reforms in the past were mainly discipline-based. The curriculum as a whole did not relate well to national goals and priorities.

In such a comprehensive review it is important that educational goals and objectives be clearly stated. Educational goals in the past were more implicit than explicit. It would be necessary to derive such goals from national issues and priorities which include the following: –

(i) Modernization is seen as a process where efficiency is linked with productivity and education to productive work, with industrialization playing a major role; (ii) religious fundamentalism; and (iii) achieving national unity through the development of citizenship qualities, cultural cohesiveness and a shared value orientation.

Against such broad national goals, educational goals centre on the development of individual potentials relevant to societal needs. Individual development emphasises spiritual and moral values, thinking and reasoning, physical well being, practical living skills, wholesome recreation, respect for others' rights and needs, creative and innovative talents, positive attitudes. Societal relevance includes communication, political maturity, national unity, socio-cultural orientation, economic principles and commercial practices, modernization, and international understanding.

The dimensions that were considered in determining a suitable focus for education included a liberal or prescribed approach in one dimension, and a general or specialized approach in another. Extreme positions along these dimensions were considered unsuitable in the Malaysian context.

A number of approaches are being considered for the development and the implementation of the new secondary curriculum. In order to achieve the goals of overall individual development for effective citizenship, a core area of the curriculum is considered necessary. Such a core would be common for both the lower and upper secondary levels and would include the following areas: communication, computation, values, citizenship, the environment, practical living skills, health and fitness, artistic and creative pursuits. The lower secondary level is to emphasise

citizenship qualities. The upper secondary level would further refine citizenship qualities and at the same time provide for some specialization.

Electives would be minimal at lower secondary with a wider range of electives at the upper secondary level.

The curricular areas are to play a more supportive role to the formal curriculum. An integrated approach to planning both areas is to be adopted.

Traditional text books are likely to be gradually replaced by resource material for teachers and pupils, perhaps in the form of modules.

Due to the large classes (40-45 per class), improved long term teaching and learning plans need to be prepared. Group work for remedial and enrichment activities, thinking and reasoning exercises and for computer work is to be promoted.

Decentralization is seen as a stimulus for localized innovation. A collective school-based approach is being encouraged to upgrade teacher competency. In this respect schools are to be "growth centres". Lines of communication between the centre, state, district offices and schools are to be improved especially in professional inputs.

In order to reduce the burden of examinations an 'open certificate' approach is likely to be adopted. Only subjects in which pupils were successful in are to be recorded in the certificate. There might even be a place for subjective forms of assessment. The present educational structure of 6-3-2-2 is to continue. The post secondary level is seen as the springboard for the supply of manpower needs. This level of the educational system has to be considerably diversified, perhaps with the co-operation of the private sector.

The present review of the secondary curriculum is seen both as a challenge and an opportunity. An opportunity because the entire curriculum could be made relevant to national goals. Certain pressing current issues such as drug abuse, pollution, safety, consumerism etc could be incorporated.

While it is fully realized that school-based education alone would not solve social problems, a certain amount of preparation and orientation would be possible. In the final analysis the success of the programme would depend on the demands made upon teachers. Our experience in implementing the new primary curriculum has clearly shown this. The new secondary curriculum would be guided by this principle: Teachers' views have to be taken into consideration.

NEW ZEALAND

The national policy for New Zealand secondary education in the immediate future is to meet five objectives:

1. The provision of a generous, balanced education for all young New Zealanders from 13 to 17 years of age;

2. Planned sequential learning experiences, through an integrated five year system of secondary schooling;

3. Flexibility to meet the differing needs of people from a number of cultual groups;

4. Gender equality; and

5. More effective learning of the 25-33 per cent of students at risk of failure or low self-esteem.

Secondary schools in New Zealand are undergoing more significant changes than at any other time in their history. Ministerial committees of inquiry are reviewing the curriculum, assessment procedures and courses which prepare students for the transition from schools to adult life. There has been increased emphasis on equity, excellence and school climate. The practice of "streaming" students into classes has been replaced by grouping on the basis of mixed ability. Corporal punishment is decreasing with the growth of guidance centred schools. There has been a major emphasis on Maori language and culture in the curriculum. Flexibility has been increased in senior school programmes through the introduction of single subject passes in national examinations. The University Entrance examination has been abolished from Form Six and replaced by a system of internal assessment.

These dramatic educational changes have been responses to economic, social and political issues with implications for schools:

1. The development of New Zealand's national identity as an independent Pacific nation;

2. The increasingly multi-cultural composition of the New Zealand population with almost twenty per cent Maori, Pacific Island and Asian people;

3. Economic restructuring with the loss of traditional markets has had major implications for employment and education; and

4. The increased retention of students in secondary schools. From being a relatively small, academically oriented population, Forms Six and Seven now include a diverse group of students.

A systems approach has been adopted in planning future developments in secondary education because the piecemeal approach to educational change used in the past has had limited success. With the systems approach a school is perceived as an integrated whole comprising three basic components – people, ideas and physical elements. This model is being used to bring about co-ordinated changes to the curriculum, staffing and buildings.

Dissatisfaction with the high school curriculum led to the setting up of a committee of inquiry in 1984. The main concerns are that school subjects are too academic, there is too much choice in junior forms and not enough choice at senior levels, and there is insufficient emphasis on vocational subjects and on values education. The committee adopted a different model for carrying out its review of the

curriculum. In this case the committee is canvassing the views of the public first using a series of booklets which focuses on a key question about schools.

One of the major constraints on changes to New Zealand secondary schools has been the external examination system. In the last three years of the full secondary cycle there are at present six different awards. All but two are based on a system of national external examinations. At present about one-third of all secondary pupils leave school without a certificate or an award. A major step was taken in 1985 by the abolition of the University Entrance Examination from Form Six, leaving the Sixth Form Certificate as the sole award at that level. The Sixth Form Certificate is a departmental qualification, courses for which are planned by individual schools and approved by the inspectors. A much wider range of subjects can be studied. The certificate is internally assessed and results are awarded on a grade system of one to nine.

A major constraint on curriculum change and improved climates in secondary schools has been the method of allocating and organising the staff. Consequently a new staffing model has been introduced in 1985 based on nine broad functions which teachers are required to perform. The hours required to carry out these functions are based on the number of students in the school.

This system which is being phased in over a number of years, creates the need for 5000 additional teachers. The priority given to this expensive change is based on the assumption that money spent on changing other components of the school system will be wasted unless there is an adequate provision for teachers.

A significant development in New Zealand secondary schools in the 1970s has been the recognition of the importance of building design in the life and work of a secondary school. There has been a major emphasis placed on designing new schools and remodelling old ones to make them more appropriate for the curriculum changes which have taken place.

A new type of school called the Whanau House has been developed over recent years. The name is derived from the Maori "Whanau" or extended family. The school is made up of a number of these houses each of which accommodates 250 students grouped in multiple age level classes.

The changes which have been described taking place in the staffing, curriculum and buildings comprising New Zealand secondary schools, are all generated by the same basic objective, to make schools into more caring institutions, with an effective learning climate.

PAPUA NEW GUINEA

In Papua New Guinea, secondary schools are divided into two levels – lower secondary and upper secondary. Lower secondary schools are known as Provincial High Schools and cover grades VII to X. At the upper level, they are known as National High Schools which cater grades XI and XII. Since 1970, both the government and church schools came under the 1970 Education Acts where the

Government funds all schools including teachers salaries and other costs in maintaining schools operations.

Since the country's Independence in 1975, questions have been raised regarding quality and relevance of secondary education by prominent leaders, parents and other interested persons. Many thought that the kinds of secondary education offered in lower secondary schools at that time were not preparing adequately those students who completed four years of secondary education. Many of these students neither were able to fit in village life situation, nor were they able to obtain an employment. At this time, there was an increasing number of students who completed grade X and could not find a place for further studies.

The Government and the Department of Education put to task in formulating institutions and learning experiences that would be appropriate to the needs and aspirations of these students and the country.

So in the early years of Independence, a group of educationalists and interested parties investigated new trends in lower secondary education. It was decided that practical projects should be intergrated into both the core and practical subjects. The core subjects are English, Mathematics, Science and Social Science while the practical subjects are Practical Skills, Home Economics, Agriculture, Commerce and Expressive Arts. Also core practical projects are selected. These include: subsistence gardening, trade store, fishing, boat building, net making, home craft, furniture making, chicken projects, house building, mechanic and canoe making. These projects vary from school to school depending on their location and needs. It was then decided it would be appropriate to offer these practical projects only at grades IX and X, that there would be no grade VIII leavers. So Secondary Schools Community Extension Project (SSCEP) started its planning in 1978 and initial trialling in schools in 1979.

While the SSCEP schools are integrating Practical village-oriented projects into their school subjects in grade IX and X, an external evaluation showed that they maintain the same level, or even better, academic results as the non-SSCEP schools.

This year, SSCEP has been integrated and accepted into secondary schools curriculum by the Department of Education.

PHILIPPINES

Formal education in the Philippines consists of six years of elementary education (with some private schools having a seventh grade as part of elementary education) four years of secondary education and four years (with variations depending upon the degree one is working for) of tertiary education.

Secondary education caters mainly to the 13-16 year age group. Under the 1973 Revised Secondary Education Programme, secondary schools are classified according to curricular types and funding source. On the basis of curricular offerings, secondary schools may be a general high school (if it offers a general curriculum)

or a vocational high school (if it follows a vocational curriculum) or a special high school (which may be either a science high School or an arts high school). Secondary schools in the Philippines may also be categorized according to funding source into national high schools (funded by the National Government), provincial high schools (funded by the provincial government), municipal/city high schools (funded by the municipal/city governments), the barangay or village high schools (funded from tuition fees of students from the barangay) and the private schools.

Presently there are attempts at redirecting secondary education in the light of the following:

1. Launching of the New Elementary Education Curriculum which is expected to produce better graduates and thus secondary education must initiate measures to insure the gains made at the elementary level;

2. Societal demands – Developments in technology have raised people's aspirations as well as the demands of labour, business and industry with regard to the quality of high school graduates. Coupled with this development would be the political reforms more specifically, the barangay concept of political participation; and

3. Studies and forums conducted have indicated the areas where reforms are needed.

Thus the proposed secondary education reform programme is directed at achieving quality, equity and efficiency in the system. The focus of the reform is the curriculum.

The main structure of the proposed 1989 Curriculum is cognitive – affective – manipulative based.

There are nine subject areas which are programmed in a 40 minute daily schedule or a six hour school day. The subjects are intended to contribute to the making of a more intellectually, skillful, values-based, communicating and productive individuals who will take their place in either the world of work or college or both. To contribute to the achievements of the goals of the bilingual education policy, there is a balance in the number of subjects that will be learned in English and Pilipino.

Other significant features of the reform programme are:

1. Inclusion of Work Experience and Values Education as new subjects in the curriculum. Work Experience is aimed at developing in the youth desirable work habits and skills, self sufficiency, productivity and skills of entrepreneurship. Values Education on the other hand is intended to provide students a cognitive-based values system;

2. Strengthening of barangay (village) high schools through self-reliance strategies for governance and financing by the community;

3. Tri-sectoral Approach to Students' Values Development. This is an approach designed to identify areas of conflicts between school-taught values and

the values practiced at home. It calls for the administration of a pretest and post-test, informational questionnaires to parents and students and dialogues among parents, students and teachers;

4. Conversion of some barangay high schools into productivity centres that will provide non-formal education to youths between the ages 13-16 years old. Parents are enjoined to assist in the income-generating projects of the youths from planning to marketing including financial management and evaluation of projects;

5. Media-Assisted Instruction – The use of media, particularly modules and radio, to improve the quality of education especially in the rural areas;

6. Capability building – Establishing centres of excellence at the national, regional and provincial levels to serve as service and training centres, resource management centres and tryout schools;

7. Creation of a technical panel for teacher education to set standards for recruitment, training and compensation; and

8. Rationalization of school location – The locational efficiency of existing secondary schools is being reviewed in terms of the catchment area, facilities utilization and growth potential.

REPUBLIC OF KOREA

The Korea secondary school system is composed of three-year middle schools and three-year high schools. High schools are further divided into general high schools, vocational high schools, and specialized high schools. Entrance to middle school from primary school has become compulsory. All applicants are accepted and allocated on a random basis to schools within the school district of residence. Over 98 per cent of all primary school graduates move on to middle schools. Beginning with rural and remote areas in 1985, compulsory and free middle school education is being introduced, intending to accomplish its full realization by 1981. About 90 per cent of middle school graduates enter high schools. Compulsory high school education is envisaged during the 1990s. About 30 per cent of middle schools and 55 per cent of high schools are private schools.

School curricula for middle schools are composed of common subjects for all students, except for vocational courses which are selective at the last year of the school. High school curricula are composed of: 1) common core, 2) required subjects in selective streams, and 3) selective subjects in selective streams. Streams of general high schools are usually divided into humanities-social sciences, natural sciences, and vocation-oriented streams. Vocational high schools have many streams.

In the last few years, several studies were conducted to examine the secondary schools by KEDI. These studies include: 1) "A survey on curriculum management of secondary school in Korea (1980)", 2) "A basic study for the improvement of Korean elementary and secondary school curriculum (1980)", 3) "A study on student's interests and needs of Korean secondary school students (1980)", 4) "A study on the realization of free and compulsory middle school education (1978-9)",

5) "An exploratory study on the transformation of the present high school structure into an integrated high school (1980)" and 6) "A study on the improvement of secondary school textbooks (1982)". Reviewing these studies, the problems that the Korean education system faces today seem to go beyond the realm of curriculum practices in the existing educational setting. The general structure of secondary education seems to require a comprehensive evaluation and structural reform.

Some persistent problems lingering in Korean secondary education are 1) shortage of financial sources in ensuring the expansion of secondary education at compulsory level, 2) lower quality of schooling in terms of lower students achievement and school life, 3) utilitarian viewpoint of people toward education, and 4) strong tendency of centralization in the decision-making process which may hamper the diversification in schooling process.

Since 1980, some provisions have been made in attempts to solve problems as well as to improve the secondary education. *First*, a measure to fullfil the aim of free and compulsory middle school education by gradual extention to disadvantaged areas is being enacted in 1985. This measure means that the compulsory school years are extended from 6 to 9. The completion of compulsory middle school education is envisaged by 1991. Expansion of compulsory education into high school will follow. *Second*, a new whole school curriculum was introduced in 1984. The new curriculum stresses on the development of whole person, naticnal identity education and science/technology education. *Third*, the long tradition of students' school uniform and standardized hair cut was abolished in 1982-3. The decisions whether to have uniform or not and to apply controlled haircut for students or not are now in the hands of school principals. *Fourth*, an education tax was adopted in 1982 in order to meet the increasing demand for finance to improve primary and secondary education. The new tax system was originally intended to finish in 1986, however it is uncertain that the government will stop the collection of the education tax because there still remains a critical need for financial support. *Fifth*, instructional television programmes were in use through nation wide net work system from 1981. Two and a half hours a day are devoted to secondary school programmes. *Sixth*, private tutoring has been prohibited by law since 1980. This measure came from a unique Korean situation where school education had been sometimes down-graded as a result of intensive private tutoring outside schools. *Seventh*, during 1982-3, four science high schools were established in an attempt to provide special programmes for science-oriented able students. All the science school students are awarded scholarship.

All these measures were taken up in order to bring maximum functional effectiveness in the existing setting. However, there have been outcrys for educational reforms in the structural bases of the system from the majority of people, including educators and leading figures, who see Korean education as a whole is lagging behind the national expectations. In response to this criticism, the Korean government has established a new body in 1985 to prepare a proposal for national education reform for the president. The new body is named the Presidential Council of Educational Reform. The membership consists of representatives of society in various fields (such as education, economics, communication, women's groups,

labour force). It is expected that the PCER will report recommendations for education reform to the president by the end of 1987, and this will definitely include a proposal for secondary education reform. With the emergence of the PCER, the whole secondary education is now under review. At present, it is too early to talk about the course of the PCER. However, it is quite certain that the new body will have a tremendous impact on Korean education in the 1990s.

THAILAND

Major developments of secondary education in Thailand have been taking place for almost half a century. The development has mainly been concerned with educational structure and curriculum. Following the Unesco report of 1949, the first successful implementation of the first comprehensive school in the north-east of the country took place in 1960. A larger-scaled comprehensive schools project was launched during 1967-1972. This project aimed at introducing the comprehensive curriculum and providing necessary classrooms, workshops, laboratory equipment, instructional media, and staff development. The comprehensive curriculum abolished educational streams and replaced them with the offering of a variety of courses open to students according to their aptitudes, abilities and interests. The unit system of promotion replaced the full year pass-fail. Subjects were assigned credits and promotion was by subject rather than by year and guidance conselling was also established. The twenty selected schools in this project were considered to be very successful, and led to the government policy of diversification of the curriculum for the Rural Secondary School (RSS) and the Diversified Secondary School (DSS) Projects. The policy was extended to all other government secondary schools in the country after the education reform in 1977.

The projects currently launched in Thailand are the Community Secondary Schools (CSS) and the Lower Secondary Schools (LSS) Projects. The aim is to upgrade and improve the quality of rural secondary schools and to make the schools functional in serving their students and members of the community in which the schools are located. The idea is to utilize the local schools as the medium and catalyst for community development, which responds to the government policy.

Considering the Thai government policies and the educational plans regarding secondary education during the past 15 years and the next half decade, it may be said that the objectives of secondary education are to (1) help pupils acquire knowledge and skills sufficient to earn a living or for necessary foundations either for vocational training or for higher education; (2) provide general education appropriate for the maturity of the pupil and the conditions of society; (3) develop desirable citizenship attitudes and abilities in order to live and work effectively with others; (4) cultivate understanding and appreciation of science, arts, culture, nature, exploitation and conservation of natural resources and environment; (5) foster a moral way of right, honesty, a sense of justice and fair-play, self discipline, good mental and physical health, and responsibility; and (6) provide educational programmes to meet the abilities, interests, aptitudes.

In order to accomplish these objectives, secondary schools need to be provided tools and management sufficient to effectively implement the diversified curriculum and to help schools to fulfill their overall functions.

Summary

Each of the participating countries is currently engaged in the reconstruction of its secondary education system in order to make secondary education more meaningful and attuned to the needs of students and the society. The most significant features of reforms in each country are listed below:

AUSTRALIA

i) the completion of a full secondary education or other appropriate education has become an important national goal

ii) the Participation and Equity Programme has given top priority to secondary schools with low retention rates with an emphasis on improving the quality of the curriculum, teaching and assessment and developing new structures which link schools, the community (including work) and tertiary institutions.

INDIA

i) the Ministry of Human Resource Development (formerly Education) is reformulating its policy so as to emphasize the need for secondary education to be relevant to the needs of society and the world of work

ii) the structure has been changed from a 10+1 pattern to a 10+2, and as a consequence courses and delivery systems are being modernised and "vocationalised".

MALAYSIA

i) the discipline-based curricula of secondary schools are being reformed so as to ensure that sources are related to national goals and priorities (modernisation, national unity, effective citizenship etc.)

ii) decentralisation and the development of modern resource material are being seen as a stimulus to localised innovation.

PAPUA NEW GUINEA

i) the Secondary School Community Extension Project (SSCEP) is seeking to integrate practical village-oriented projects into their school subjects in Grades nine and ten

ii) following a successful pilot programme, SSCEP is now being integrated into the secondary school curriculum.

NEW ZEALAND

i) Ministerial Reviews have placed increased emphasis on equity, excellence, school climate and design

ii) concern about the academic nature of the curriculum has led to a review which has involved wide consultation with the community as a prelude to the reform of the curriculum and assessment procedures.

PHILIPPINES

i) the proposed secondary education reform programme is directed at achieving quality, efficiency and equity in the system

ii) the reform focuses on the curriculum with a broadening of goals in nine subject areas, (with the inclusion of work experience, values education) and on strengthening barangay (village) high schools.

REPUBLIC OF KOREA

i) to fulfil the aim of free and compulsory middle school education, provision of schools in disadvantaged areas is being enacted

ii) a new curriculum which stressed the development of the whole person, national unity and science-technology education was introduced in 1984.

THAILAND

i) the development of secondary education now aims at achieving quality, relevance, efficiency and equity in the system

ii) the development focuses on the diversification of the curriculum and change of secondary schools into the community school concept.

There are a number of issues and themes common to all participating countries, while at different stages in the development, each secondary system was originally a restricted one, catering only for a highly selected intellectual and social elite. Secondary schools served mainly to prepare students for university entrance examinations. The curriculum was subject-oriented and externally prescribed and assessed.

The concern for greater equality of educational opportunity, better standards, increased economic productivity, attention to the needs of all students attending secondary education, the call for closer links between secondary education and the needs of the community and the country, and technological change have led to demands for reform in all countries in the region.

The response to the challenges of the next century while framed within the constraints of existing resources and national priorities, point to the emergence of a

new conceptual framework of secondary education which has a number of common features:

i) modifying the basic purposes of secondary education from preparation for higher education to preparation for life in a rapidly changing, complex world;

ii) modifying the structure of the country's education system so that there is a better articulation between different sectors of education and between secondary schools and the community (including existing and emerging occupational patterns);

iii) finding an appropriate balance in the curriculum at each level of secondary education between catering for national priorities, preparation for work and further education, and individual developmental needs;

iv) developing more effective and flexible educational materials, instructional methods, buildings and training programmes for teachers so as to successfully implement reforms;

v) monitoring and evaluating new policies, programmes and methods in ways which enable them to be progressively modified and improved; and

vi) networking of secondary schools and the development of clusters.

Chapter Three

REVIEW AND EXAMINATION OF STUDIES

As a follow-up of the APEID Task Force meeting held in Jakarta, Indonesia in 1984, a number of countries were approached by the Unesco Regional Office for Education in Asia and the Pacific seeking information about new developments in secondary education and studies on new models of secondary education.

The letter sought comments on the objectives and expectations of each country in the diversification of the curriculum of secondary education and ensuring relevance to society and the world of work. In addition, comments were sought on four policy issues raised as a result of the findings of a study of projects on the diversification of secondary education in Africa, sponsored by the World Bank, namely:

1. Results of the study indicate that traditional academic school graduates are just as likely to find jobs as diversified school graduates. How, then, will the proposed diversified school increase the employment prospects for their graduating students?

2. The findings show that students in specialized curricula programmes tend to change their fields when pursuing further training. How can the proposed diversified school ensure that continuing students will choose to stay in their fields and not enter programmes that have little to do with their earlier training?

3. Experience suggest that diversified school graduates fail to earn more than academic control graduates. How could proposed diversified schools guarantee higher earnings to their graduates?

4. The analysis of school costs shows that the less specialised the curriculum, the less costly the programme. The teaching of more general skills also may offer a greater degree of employment flexibility to students entering an uncertain job market several years down the road. What pedagogical or labour market benefits would result from the proposed diversified school to outweigh the higher costs?

The response to the request for reports on the diversification of the curriculum as a facet of the APEID Studies on New Models of Secondary Education and for comments on the issues raised by the World Bank study was encouraging. Material was received from Australia, China, India, Malaysia, Papua New Guinea, Philippines, Republic of Korea and Thailand.

In this chapter, first a summary of responses to the policy issues raised is presented, and, second, reports and studies of innovations in secondary education in each country are also examined.

The summary of the papers and responses indicates that while vocationalisation of secondary education has met with difficulties in some African countries (as borne out by the World Bank Study referred to above), some entrenched traditional attitudes against vocationalisation of secondary education in those countries need to be changed.[1] School solutions are not substitutes for what should be done in the economy. Economic and school solutions, however, are not mutually exclusive. School solutions are still needed, including those which seek to speed up, intensify or support economic solutions.

According to Dr R Singhal (India), school and work cannot be delinked. What is required is a proper identification of vocational needs and an effective interface between education and employment through appropriate man-power need assessment. Referring to the recent Kulandaswami Committee Report (August 1985, Ministry of Education, India), he observes that it is not only at the senior secondary stage that vocationalisation of schooling is needed, it is required to be introduced even at the lower secondary stage.

Dr A Ryan (Australia) observes that diversification of curriculum at secondary stage should be seen as a preferred alternative to a premature entry to the work force, else premature school leavers will face the problem of dead-end jobs, unstable employment and no training prospects for developing transferable skills.

In Malaysia, it is felt that secondary education should be seen as contributing towards the preparation of pupils so that they would be better trainable and educable at the post compulsory level, rather than narrow specialisation at an early stage.

Productive Labour education has been incorporated in high school programmes in China since 1958. The Chinese experience is that graduates of the vocational middle and high schools develop a strong sense of labour discipline, a high level of skills and adaption ability. Moreover, attitudes of factories to vocational school graduates have changed and they are now being recognized by the society.

In response to the first policy issue, the Philippines suggests that the needs of society dictate the orientations of education and employment prospects. The academic programme of the early Spanish days prepared an elite with the values and skills demanded by a colonial society, but that the present needs of society for balanced individuals requires the type of programme provided by the diversified school. Any educational or training programme (academic or vocational) must take into account the pace of development and rapid changes in the job market: students need generalised training in high schools not a specialised vocational training.

The diversified school is seen by the Philippines as more cost-effective in producing well-rounded individuals prepared for life in an uncertain world. It would not demand the same sophisticated tools and equipment as specialised schools and avoids the problems of mismatches between equipment used in training and that employed by industry.

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[1] See M.D. Leonor *Unemployment, Schooling and Training in Developing Countries*. International Labour Organization, 1985.

Studies of new models of secondary education

AUSTRALIA

1. **Diversification and relevance in the Australian Secondary school curriculum**: A review of issues and developments (Dr A.S. Ryan, Western Australia Institute of technology).

In Australia there has been a progressive deterioration in the labour market opportunities for young school leavers. Studies of early school leavers show that they tend to move into low skill, poorly paid and unstimulating employment (and unemployment) with little or no associated training or prospects for future development.

The research also shows that those forced to stay on at high school tend to become alienated, to reject school, have low self esteem and a history of poor academic performance. A number of major reviews of education and labour market have been undertaken. High schools are seen as an inappropriate context for providing highly specific vocational training because labour market projections for specific jobs tend to be unreliable. Such projections provide an insecure base for curriculum development. Nevertheless, high schools are seen as playing an important role in equipping young people with the general applied knowledge, skills and attitudes needed for work and life in an uncertain future.

2. **Changing patterns of secondary education**: (Professor P.W. Hughes, University of Tasmania). Studies of secondary education in Australia indicate that a high proportion of students at year 10 level (the last year of compulsory education) are dissatisfied with secondary school because for many students high schools are seen as uncaring environments which over-emphasize intellectual development and whose curricula fail to prepare students adequately for life. The Australian studies suggest that schools must place areas of knowledge in a broader context if they are to enable people to cope with the problems of the future, and if they are to develop commitment to social and human values.

The studies also indicate that there is a high degree of consensus about the broad scope of secondary education and the curriculum. The areas seen as achieved best include basic skills, socialisation and academic subjects; those falling below the desired level include health, personal development and social awareness, practical and aesthetic orientation. The results suggest two broad roles for Australian secondary education: an instrumental role involving the perceived usefulness to the individual as an individual and as a member of society; and a developmental role, which sees the person developing as one capable of playing a responsible role in society and as developing as an individual.

CHINA

New models of secondary education – vocational training and technical education in secondary general education in the People's Republic of China (Central Institute for Educational Research, Beijing, China).

Since the founding of the People's Republic of China, there has been a tremendous growth in education, with enrolments in junior and senior high school rising from 1.3 million in 1948 to 49 million in 1979.

Prior to 1957, the curriculum offerings in general high schools were academic only. In 1958, the Ministry of Education formulated a policy that productive labour education should be incorporated into senior high school programmes. In 1980 the State Council approved a report on reshaping the structure of secondary education. Since then agricultural and vocational high schools, and secondary professional, secondary technical and secondary teachers schools have been developed. Also, since 1981, a labour and technical education programme has been added to elementary and high schools.

In some general high schools academic courses are complemented with work/labour and technical education programmes. These are aimed at providing fundamental knowledge of production and initial work skills. In others, they have been vocationalised, offering both academic and vocational/technical courses. The aim is to produce manpower developed in an all round way. The result of various responsibility systems in rural areas and vocational training in junior high schools has been reflected in agricultural production. Changing ordinary academic schools into agricultural and vocational schools has been a success in China: the reform has helped to eliminate the divorce of knowledge and application, theory and practice, and study and employment.

INDIA

Diversification and vocationalisation of secondary education in India – A new perspective: (Dr R.P. Singhal, National Institute of Educational Planning and Administration)

Efforts have been made since 1966 to vocationalise higher secondary education in India under the 10+2 pattern of school education. However, thus far the response to the policy has been poor. By the time students finish year 10, students have developed an attitude favouring white-collar over blue-collar jobs. The vocationalisation of secondary education has also suffered at the implementation level because of the lack of trained teachers, equipment and resources; the dominance of theoretical courses and a rigid examination system; the absence of reliable data on manpower requirements; and poor linkages with industry, agriculture and other establishments.

The key issue in India is that of making secondary education more relevant to the needs of the individual and of society. The population of the region represents the world's larger concentration of the poor, most of whom live in rural areas and have an annual per capita income of less than US$70.

Evidence indicates that general education does improve the productivity of farmers, but questions as to the kind of education which is most effective and how educational needs can be most economically met remain unanswered. Secondary education of the future will demand institutional planning to overcome the

difficulties and will need to break away from traditional rigidities to suit the current and emerging challenges.

MALAYSIA

Studies of new models of secondary education: (Ministry of Education, Kuala Lumpur, Malaysia).

In discussing new models for secondary education it is necessary to relate the emerging structure to changes in the economic, social and political context. Malaysia is moving from an agricultural to an industrial society. In a Multiracial country, national unity is also a high priority and prerequisite for other forms of development.

The entire education system is being reviewed with national unity as the overarching goal and a balance between individual development and the individual's expected contribution to national development being sought. Proposed innovations centre on clarification of the distinctive roles of secondary education; the diversification of skills to include both general academic and vocational skills; the postponement of specialisation until much later in the system; a balance between private and public sector contributions in planning post-secondary education; and a secondary model which contributes to the mastery of a wide range of skills needed for future education and careers.

PAPUA NEW GUINEA

A review and analysis of educational needs at the secondary level in Papua New Guinea: (Prof. M. K. Baccus and the Educational Research Unit of the University of Papua New Guinea).

This study began with an historical analyses of educational developments in Papua New Guinea in order to identify some of the qualitative and structural constraints which have prevented the educational system at the secondary level from achieving its "optimal output". The study focussed on the efficiency and effectiveness of the system in terms of its utilization of resources and its contribution to the development of the individual and of the nation. Inputs examined included the curriculum (and its relevance to the needs of the society), the quality and quantity of teachers produced for secondary schools, and equality of access. The study concludes with an examination of the effects of proposed changes in education on longer term developments in the society, of societal developments on the education system, and of the development strategy being pursued in Papua New Guinea.

The development strategy proposed argues for a quickened growth of upper secondary education in accordance with needs for skilled manpower and the reduction of dependence on expatriate personnel; the establishment of strong practical links with village, rural and community life through the introduction of appropriate curriculum changes (SSCEP); and the reduction of the rural/urban gap in education provision.

PHILIPPINES

a) *The 1989 Secondary Education Curriculum: A proposal.*

b) *New models of secondary education: The Philippine experience:* (Dr. E.A. Gonzalez, Ministry of Education, Culture and Sports, Manila).

Philippine secondary education has evolved through the years as a response to the changing needs of Philippine society. As needs changed from those of propagating Christianity, to training for civil service and profession, to education for citizenship in a democratic society, education changed. When economic problems beset the people economic productivity was given emphasis in a secondary school work-oriented curriculum. Today, in the midst of a scientific-technological revolution, secondary education is being geared to life in a technological and highly competitive world. The secondary education system is being adapted in the light of new demands which will be made upon it. Initially the sector was examined to establish its present performance and its capability to cope with the greater number and better quality of inputs from the reformed elementary system in 1989.

In this context, a new curriculum is being proposed that will enable 13-16 year old Philippines to be educated in the concepts and skills that the new technology requires as well as the values that would be foremost for the ability of people to preserve their humanity while putting science and machines to use.

REPUBLIC OF KOREA

Development of a new model of secondary education: (Kwak Byong-Sun, Korean Educational Development Institute).

Several studies have been carried out in Korea for the purpose of identifying and solving problems with the curriculum and low student achievement. Three studies undertaken by KEDI were used and are reflected in the curriculum reforms of 1984. An explanatory study on the transformation of the present high school structure into an integrated high school was also undertaken by KEDI. This study revealed a number of basic problems with the existing structure of general and vocational high schools which sheds light on structional approaches to the improvement of secondary education in Korea.

THAILAND

a) *Thai-Alberta Co-operative Assessment Project Concerning Rural Secondary Schools 1978-1980:* (Department of General Education, Thailand and Faculty of Education, University of Alberta).

b) *Evaluation study of the Diversified Secondary Schools Project:* (Joint Committee from Ministry of Education, Bureau of Budget, Office of National Education Commission and Office of National Economic and Social Development Board, Thailand).

c) *A review of the historical development, recent and current programmes and future model for a diversified curriculum of secondary education in Thailand:* (Supervisory Unit, General Education Department, Thailand).

These three studies reflect the interplay between research and evaluation on the one hand and secondary school reform in Thailand on the other. The first report sets out to assess the degree to which Rural Secondary Schools in Thailand were achieving their objectives and obtaining data to aid future decision making concerning the diversification of the curriculum in Thai secondary schools. The result suggest that this massive and complex innovation in Thailand has demonstrated the possibility of greatly improving secondary education in rural areas of the nation. The second report revealed that the quality of secondary schools in provincial towns had been upgraded to a considerable degree as part of the DSS project with students attaining high standards and comparing favourably with Bangkok in several areas, in adding skilful manpower to the provinces; providing practical experience to students, and promoting the overall socio-economic development by the community they served.

The third study was prepared to serve as a basis of discussion relating to the APEID programme on new models of secondary education. The report considers the prospects for the diversification of secondary education in the future in the light of an examination of the historical development of education in Thailand, six recent and on-going programmes (including those reviewed above and the Lower Secondary Schools Project), projected trends for models of secondary education and the Sixth National Plan of Education. The implementation of this plan will see increased efforts to diversify the curriculum, especially in provincial and rural secondary schools, equal opportunity and the aim of creating a condition of self-reliance within one's own community.

Implication of studies

Somewhat different emphases in the conception of the type of secondary education needed for the future emerge from these studies. These emphases reflect conceptions of the capabilities as well as qualities sought in the educated person which are dominant in different countries.

Most of the responses by countries in the Asian-Pacific region to the questionnaire indicate that they do not share the narrowly-formulated economic assumptions implicit in the way in which the questions were framed. Most countries seem to share the view that the good society is not only productive, but that it also creates the conditions necessary to maintain social cohesiveness and to preserve qualities of human values in a competitive world.

Views do differ, however, as to how closely the secondary education system should be linked with the immediate manpower needs of the nation. Some of the countries responding seem to see the educated person as one who has the specific knowledge and skills demanded by the economy. Most Asian and Pacific countries, however, seem to share the view that the educated persons have a broad base of

knowledge and skills which enables them both to participate in work and adult life, and to adapt to changing demands.

There are variations too in perceptions of the means needed to achieve the ends sought. In some countries, the State is seen as the prime instrument of social reform, and emphasis is given to careful planning and regulation by central authorities. In many countries in the Region, emphasis is being placed on the development of autonomous, yet socially responsible individuals. Accordingly, greater freedom is being given to schools and communities to seek solutions and regulate their own affairs.

Environmental constraints as well as political ideologies influence conceptions of appropriate ends and means in education. A very general secondary education for five or six years might be a luxury in countries that desperately need to relate education to productive work. On the other hand, extreme specialisation may not prove cost-effective in a rapidly changing, technological world.

Whereas countries in the Asian-Pacific region cite many of the same qualities in accounts of emerging models of secondary education, the exact proportions needed at any given time have to be worked out in the context of each country.

Chapter Four

TOWARDS A CONCEPTUAL FRAMEWORK AND NEW MODELS

An attempt was made at the Forum to develop a conceptual framework of new models in secondary education. The discussion was introduced with a summary of the emerging models and frameworks by a member of the Forum.

The Forum was reminded that a child born today will enter the 21st century as a secondary school leaver. Education, therefore, has to equip itself in such a way that it produces school leavers who are able to meet the challenges of the coming century. Given the rapid rate of scientific, technological, economic and social change, the education system itself must be in a constant state of review and change if secondary education is to adapt to the changing situation.

Secondary education has an important role to serve in accelerating the pace of development of a country. It must meet the needs and aspirations of its people, while at the same time taking note of developments underway in other parts of the world, particularly in the region. Secondary education cannot afford to remain in isolation. The new model of secondary education has, therefore, to be forward looking, to cast itself in a mould which is sensitive to emerging needs of the individual and the community but without being parochial or indigenous.

Some problems to be faced by secondary education are common to all countries in the region, some are unique. Developing countries in particular, face unmet demands, increasing participation rates, limited financial resources, large classes and increasing teacher-pupil ratios. They will, therefore, have to think of non-conventional and non-formal approaches to achieve their goals. Developed countries share the problems of adapting, developing and implementing new technologies, new and less formal curricula and equality of opportunity, while facing particular problems of alienation within schools. New teaching techniques, use of new teaching aids, part-time and own-time education, open/school, distance and other innovations will have to be adopted in a big way to meet the new demands. Restructuring of secondary education will, therefore, have to admit new approaches – both formal and non-formal, with inter-linking bridges inbuilt into the system.

Relevance and productivity will have to be given special focus in the new models of secondary education. The emphasis will have to be on "human resource development", that is, students prepared in such a way that they serve as a valuable resource and are capable of contributing to national development. In that respect, secondary education and work will have to be integrated so that the productivity of the students is increased. Strong links will have to be established between secondary schools and factories, farms and community projects.

In order to provide for inter-disciplinary study of subjects and to offer flexibility in the choice of subjects, a modular approach to development of syllabuses

is called too. Such an approach (along with project work) will help considerably to modernise the teaching – learning process and make it more need-based. The curriculum of secondary schools has thus to undergo a significant change in the immediate future.

The changes in curriculum and teaching – learning practices have to be accompanied by simultaneous renewal and modernisation of evaluation and teacher – training methods. Unless the secondary school provides for opportunities to students for extension work and their involvement with the community, the students will, it is feared, continue to remain alienated from real life situations.

The secondary education of the future has therefore, to evolve new models which would meet the challenges of equity, excellence and productivity.

In developing a conceptual framework for secondary education in the future, a member argued that we should take a broad view of the nature of education and the needs of the community. There is a need for educators to reiterate that the level of education achieved by individuals and societies does make a difference to the quality of life possible, but that there are limits on the degree to which education can and should be used to serve political and economic ends. In designing secondary education, policy should reflect the educational needs of students communities and society as a whole with an emphasis on building on the strengths, improving the quality and appropriateness of provision, reducing gaps between ideals and reality, capitalising on the opportunities created by new technologies, restoring the faith of communities in the education system, and facing the challenges of the future.

Society is at a crossroad. The dramatic downturn in the economies of nations in the region, the "technotronic revolution", and corporate-consumer society brings with it the danger of greater inequality and polarisation brought about by the concentration of economic power and scientific-technological expertise in some nations and groups. In planning secondary education for the future we need to have in mind the kind of society we wish to create. Two pathways are possible for countries in the region:

Scenario A: A society dependent on the experts in the national capital and the experts and corporations in overseas countries; a society in which schools serve to prepare the masses as consumers and a select group of leaders/experts; a vulnerable, polarised society.

Scenario B: A society which seeks to preserve and increase the capacity of ordinary people to take charge of their destinies, to contribute to the productive process and to redefining and improving the quality of life, and to the solving of social problems in a diversity of ways; a society in which schools seek to raise the knowledge and skills needed by all citizens to a level necessary to participate effectively in an open, productive society.

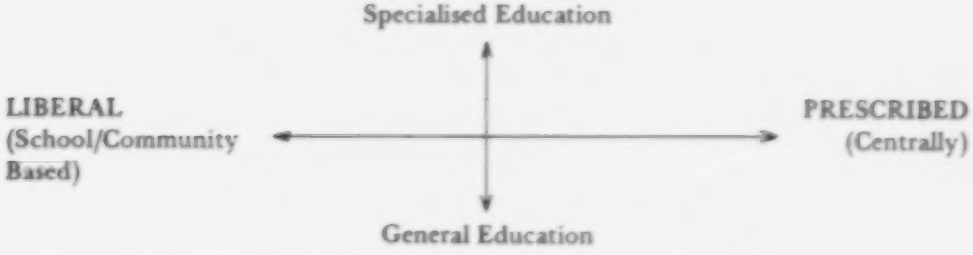
The conceptualisation of secondary education which we have inherited is geared more to Scenario A than B. If we wish to lay the foundations for a cohesive, equal, independent and productive society, the conceptual framework must be

changed. The model school must become that of a caring, productive community with a clear educational and social mission equipping all young people with the capacity to take up a variety of options in life and work and to live with dignity. This is not to say that secondary schools should neglect the development of the mind, but that a new paradigm for liberal or general education is to be developed. A liberal education implies an opening of wider visions and possibilities in life – autonomous, productive lives as well as well stocked minds. It implies a view of education which reveals the proper place of disciplined knowledge in the general scheme of things as part of one's preparation for life; one that integrates thought and action, reason and emotion, schooling and life.

It implies a secondary curriculum built on a firm basis of values including interpersonal morality, knowledge and understanding of the human condition, pursuit of the personal and common good, aesthetic and religious values. It implies firmer and clearer lines of responsibility, communication and collaboration between secondary schools on the one hand and industry, commerce, communities and other sectors of education on the other. It implies that all young people have the right to a quality secondary education as they mature, and that they should not be locked into an education system which reinforces inequalities in the existing social structure.

The model of secondary education being proposed is one built on a framework which would restructure facilities to meet the secondary educational needs of all young people in a flexible, comprehensive system responsive to the varied needs of communities and changing patterns and opportunities in work, leisure and community service. It would be more caring adult and community oriented; allow more flexible and varied entry, time and attendance patterns; and the imaginative use of space and facilities.

Figure 1. Framework for choices to be made in designing secondary education



It is necessary to be clear of the overall purpose and role of education before specific curricular details are identified. Such an approach is more appropriate to developing countries with centralized systems. When the entire curriculum is to be reviewed, the focus on emphasis of education has to be made clear. From the discussions held so far there are clearly certain choices to be made. These choices are between whether the education system is to be liberal with free choice of study areas or prescribed with few choices. Another dimension to this is whether education is to be general or specialized (see Figure 1).

Such choices are very much dependent upon how education is seen as serving the development needs of the pupil and the nation. The right mix between their divergent dimensions is the essence of establishing educational thrusts. The model determined along these lines is by no means fixed. It would change with time and the emergence of new developments. Indeed participants were able to locate past and emerging models in their countries using the dimensions suggested by this framework. Most seemed to be moving towards the centre on each dimension.

As an example, overarching national goals of a developing country with a centralized system could be national unity and productivity. There could be several approaches adopted for achieving these goals such as: eradicating poverty, restructuring society, expanding the occupational infrastructure etc. The means employed in these approaches could be modernization to achieve higher productivity, industrial developments through high technology and manufacturing and training for skilled manpower supply. They represent broad macro approaches and means.

The specific contribution of education could be the development of those potentials of the individual considered relevant to their demands, citizenship qualities and sensitizational and orientation to national and societal demands.

What is to be stressed is that the exact educational inputs in this approach are derived from the broader overarching goals, approaches and means. This analysis is crucial to determining the exact thrust and focus of education. These considerations would also help in determining the place that education should take within the dimensions stated earlier.

A very significant trend now is to diversify education. By diversification is meant including vocational or prevocational components in the academic stream. This amounts to a certain degree of specialization. What needs to be appreciated is that in the past academic graduates have always been favoured in job placements. The employment of graduates with diversified skills is a recent phenomenon when the economy has expanded and when modernization and indistrialization has advanced dramatically.

The phenomenon of changing fields of specialization is an aspect of growth and maturity based on personal aptitudes, strengths and weakness. However this is not to be done arbitrarily but based on sound guidance.

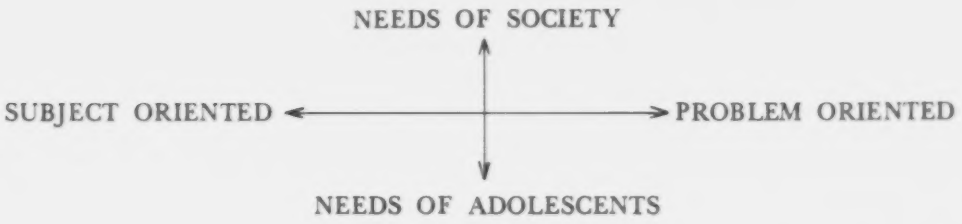
There is no guarantee that diversified graduates would earn more. Earning power is also determined by the state of the economy and the power of industrialization. Job training within the school system is closely linked with the drop out rate. When the drop out rate is high and early in the system, vocational training has to be provided proportionately, earlier. As free or compulsory general education is extended further into the system, vocational education could be postponed.

Broad clusters of skills appropriate to general vocational fields would be more suitable than narrow specialization. This would allow for the flexibility required in an ever changing environment.

Secondary education for the future

It was suggested in discussion that another way of conceptualising the new models of secondary education stems from the relative emphasis given to the needs of the society and the needs of the child, and the degree to which education is viewed as a process of acquiring knowledge through the systematic study of subject areas or through experience and problem solving. The design of new models implies choices along the dimensions shown in Figure 2.

Figure 2. Framework for planning secondary education



In designing secondary education the choices implied by Figures 1 and 2 should not be seen as mutually exclusive. In both cases, the conceptual framework emerging suggests the possibility of creating new options in design which integrate features of the extremes. For example, the needs of society and those of adolescents are not necessarily in conflict : adolescents are seeking a meaningful and productive role in society and want an education which prepares them for work, the society needs well trained, competent and productive workers. In seeking to contribute to the solving of technical problems in a community (e.g. improved sanitation, more efficient use of energy resources), secondary students may draw on ideas and principles developed as part of a science or design course, while at the same time the structure of the students' knowledge of science can be enriched and extended (as the Secondary School Community Extension Project in PNG demonstrates).

From a Philippine perspective, a new model of secondary education should have the following elements or conceptual features : focus, financial component, context and a curriculum component.

A. *Focus of the model.* Over and above anything else, the model should focus on the 13-17 year age groups. The model should take into consideration the nature, needs, aspirations, interest, values and rights of this age group. Ralph Tyler, in his classic book on curriculum, talks about deriving educational objectives from three possible sources : the needs of society, the discipline and the child (though he did not make any specifications with regard to proportions). Most countries, however, tend to take into account largely the needs of society. But what in effect should happen, is that the needs of society ought to be translated into the students perspective or in a manner that would be understandable to the student. In this day and age, the rights of youth (cf. Unesco Bill of Rights) should be addressed in the model. These rights may very well constitute a part of the assumptions for the model.

B. *Financial component.* Models do not often times work out because they are not financially feasible. In this regard, there is a need to prioritize the components of the model.

C. *Climate or social-political context* in which the model will be operational. Basically, any educational model will follow the features of the political model because schooling is, in essence, a means of political-cultural socialization. Thus there would be a need to consider the political scenario in conceptualizing a model for secondary education.

D. *Curriculum.* The model should:

i) Have a structure which is balanced and includes a combination of different types of subjects. The target of the model should be the development of a thinking, feeling and acting individual, in effect total human development;

ii) Substantive and procedural Content (particularly with reference to procedural content) should be sequenced on the basis of research in the field of the psychology of learning and human development; and

iii) Instructional strategies, objectives and the learning experiences provided for in the model should be congruent with those of the other curricular levels. In effect there should be articulation between the elementary school model and the model for the secondary level – they should complement each other. The curricular programme for the two levels (i.e. elementary and secondary) should be integrated.

Whereas the paper on national plans and policies focussed on the Secondary School Community Extension Project, a member of the Forum discussed Papua New Guinea's development and acceptance of a new framework of secondary education as spelled out in the *Report From Task Force E* on the education development strategy for provincial high schools for 1986-1990. The strategy is being formulated within the general objective:

'To educate students to become useful and productive members of society with special emphasis on the application of acquired skills and knowledge and development of positive social attitudes and provides opportunities for students to achieve personal fulfillment.'

As many lower secondary school leavers are having difficulties in finding jobs and fitting into town and village life, the Department of Education has developed the Secondary Schools Community Extension Project as a conceptual model of how to provide practical learning situations where different skills are taught and learnt in a community context. Progress has been made in ensuring that people who implement this project (SSCEP) are fully equiped to monitor its effectiveness. All schools are being encouraged to implement this approach.

Grades XI and XII provide upper secondary education in more specialised areas and employers, learning and training institutions are seeking and taking increasing interest in grade 12 graduates.

Secondary education for the future

In summary, secondary education should be framed so as to provide appropriate relevant education to the needs of the individuals and the country. Emphasis is now placed on providing secondary education to increasing number of people to lay the foundations for development and harmonious community living.

Drawing on research done in 1983 and the Sixth Education Plan (1987-1991) in Thailand, it was suggested that any solution to the needs of the community and its problems would require the co-operation of all government and private organizations, with the school as co-ordinator, serving three main functions; teaching students, providing education for out-of-school students, and providing various community services through the students.

Specific plans for implementation of structural reform and diversification of programmes for secondary schools might incorporate such policies as

1. Offer equal opportunities to primary students for further education;

2. Upgrade secondary schools so that they reach the same high standards with special attention to small schools and schools in remote areas;

3. Promote the development of staff so that they can teach efficiently, employing suitable methods and technology to help improve teaching-learning results;

4. Use learning-teaching processes that coincide with community conditions and local resources, thus allowing learners to solve their own problems and develop a sense of responsibility and good attitude to work;

5. Promote and encourage the establishment of academic centres and guidance counselling for academic and vocational fields;

6. Promote a readiness for serving and developing the community in which the secondary school is situated, particularly rural communities, with the school thus becoming centres for community services; and

7. Improve the organization and administration by means of decentralization so that secondary school administration will become more efficient.

The development of any conceptual framework ultimately reflects some conception of the qualities of the educated person in an ideal society. One way of developing a framework presented by a participant focussed attention on different ways in which people solve problems, seek interests and purposes, deal with others and handle information. These are depicted in Figure 3.

Figure 3. Qualities of the educated person.

Ways of solving problems	tradition ritual	creative exploratory
Ways of seeking interests	pragmatic inequitable	altrustic just
Ways of dealing with others	autocratic dependent	democratic autonomous
Ways of dealing with cultural elements	comparmentalised rigid	integrated flexible

The conception underlying the thinking of participants is located towards the right-hand side.

The development of a conceptual framework of new model of secondary education was seen as involving:

1. Establishment of connections between schooling and work;

2. Demand for strong commitment to excellence in facilitating students' intellectual ability as well as in helping students to acquire morale integrity;

3. Establishing co-ordinated network among and between different educational institutions;

4. Development of decision making ability with focus on problem solving;

5. Creating programme which anticipate a perspective future;

6. Harmonizing unity versus diversity in educational provisions; and

7. Promoting better school life and quality of education.

In order to develop a new model of secondary education which incorporates these features, consideration needs to be given to the level at which action needs to be taken, namely, at the level of policy making, programme development and site-specific development and adaptation.

In several member countries, secondary education is expected to prepare young people to play a full and vital part in society and to take a pride in their identity as members of a multi-cultural society. The aim of secondary education is to help young people towards their fulfilment as individuals and to assist them to appreciate that, in a democracy, there should be a balance between personal freedoms and civic and national responsibilities.

Equity is a concept which is integral to secondary education. This is the belief that all young people, whatever their ethnic or soci-economic background, whatever their intellectual ability and whatever their occupational ambition, should

be provided with a free, well balanced education to enable them to develop to their full potential. The pursuit of individual excellence is a basic goal of secondary education.

Adaptability to change is a key component of the conceptual framework of secondary education. Throughout the process of learning, knowledge should be gained, skills should be acquired, initiative and enterprise promoted, and attitudes developed, which will lead to independence and to the ability to adapt readily to changing circumstances with intelligence and confidence.

The conceptual framework is based on the assumption that there must be a balance between specialisation to cater for individual differences, and a broad general education to meet community needs and the goal of equity. Each person will then realise his or her full intellectual, physical and emotional potential, aware of the needs of the community and willing to contribute to its welfare.

A conceptual framework of education in one participating country (New Zealand) is therefore built on three broad dimensions of growth: intellectual, personal and social.

The Conceptual framework:

Secondary Education is part of a lifelong process wich helps people in three dimensions:

1. **Intellectual**

   Secondary education helps people to :

   a) develop their ability to communicate and calculate;

   b) develop their ability to think and solve problems;

   c) gain personal satisfaction through learning and encourages their urge to enquire; and

   d) develop an appreciation of the contribution that the arts, sciences and technologies make to people's lives.

2. **Personal**

   a) develop a sense of personal identity and self-worth;

   b) develop their ability to respond to experiences in creative and inventive ways and to develop reliable and workmanlike habits;

   c) develop an understanding of themselves as New Zealanders, their history, culture, institutions and ways of life;

   d) develop an understanding of and a sense of responsibility for their own and others' health; and

e) become self-reliant and to develop a sense of responsibility for personal and group actions.

3. **Social**

a) develop some understanding of factors influencing the New Zealand economy, of the various roles they can be expected to play, and of the skills and attitudes they will need to participate in it effectively and responsibly;

b) develop an understanding of the personal, social and other skills and attitudes they will need to participate in the various communities in New Zealand;

c) develop an understanding of people in other countries and cultures, and relationships with them;

d) develop an understanding of and responsible attitudes to natural and man-made environments;

e) accept the right of individuals and groups to be different; and

f) encourage the pursuit of excellence through individual and co-operative endeavour in the best interest of the community and nation to which they belong.

In summary, the experience and studies of secondary reform in countries in the Asia-Pacific region has been that efforts being made to diversify the curriculum of secondary education and to ensure greater relevance to the world of work and society have been reasonably successful. Students find secondary education more relevant to their needs and they are better prepared for the demands of a changing, complex world; closer links are established between the secondary school and the community it serves, to their mutual benefits.

Changing secondary education from its established academic traditions must be expected to be viewed with suspicion initially by conservative groups in the community, but the evidence suggests that the academic and specialised high school provides too narrow a preparation to serve the needs of today's students and the nation. Each country in the region is developing a new model of secondary education which reflects its particular needs and circumstances. While changes in secondary education alone cannot be expected to solve all the economic and social problems of society, the educational reforms currently underway are designed to improve the quality and appropriateness of the secondary education being provided. The evidence suggests that a diversified curriculum which matches the developmental needs of adolescents and the goals of communities and the nation provides a better and more balanced preparation for life in the modern world.

Chapter Five

ALTERNATIVE OBJECTIVES ISSUES AND GROWTH POINTS

The last two decades have seen more changes and innovations in the educational systems of countries in Asia and the Pacific than at any other time in history. These changes could be characterised generally as determined efforts to move away from traditional to more innovative approaches; from passive to more active methods and techniques; from indifferent to a more purposeful orientation. No longer is education seen as an imposed alien influence. It is indeed actively sought because education has been deliberately linked with development. Education has now a purpose and this purpose is largely self determined.

Each country now has to formulate objectives, and curricula for secondary education within the overall frame of its national objectives of development. But while it is imperative that secondary education must cater to the emerging needs of the society, it must also respond to the developments that take place in other parts of the world, particularly in the region. While providing for an indigenous system of education, it should take into account the realism that modern means of communication have made the world a global village. It would be difficult, to think of any system in isolation. Secondary education has, therefore, to cast itself in a mould which is flexible and not too oblivious of what is happening elsewhere, more so in the neighbourhood.

It is now recognised that education influences and is influenced by, the rapid scientific and technological advances which are taking place all over the world. Unless growth takes place in education through the introduction of innovative practices and the development of alternative objectives, the people of Asia and the Pacific will not be equipped to meet the challenges of the future.

Once that premise is accepted, it becomes easier to accept that developments like computer-aided instruction, open learning system, undifferentiated curricula for rural-urban and male-female population, inter-disciplinary approaches to teaching, integration of education and work, and the establishment of a value system which would promote international understanding, peace and harmony, will become some of the important components of secondary education in the future in all countries.

Pressures for change

Secondary schools were first established in Asia and the Pacific for an elite group of students who were intellectually capable of passing the competitive entrance examinations and had parents with enough wealth to pay the fees. The role of these schools was basically to prepare students for university studies.

The context within which secondary education is now taking place has changed dramatically.

The universalisation of primary education in most countries is resulting in rapidly increasing numbers of students prepared and expecting to enter secondary schools. Rising standards of living and increased government assistance are making it financially feasible for larger numbers of students to attend high schools. No longer are all those who receive secondary education plan to go on to university. In fact an increasing proportion are leaving school to enter non-professional sectors of the work force while many will not gain any employment. Alternative objectives of secondary education are required to meet the needs of these students.

Economic, social and political changes have also created the need for alternative models of secondary education. A number of Asian and Pacific countries are moving from a predominantly agricultural economy to industrialisation with manufacturing sector playing a vital role. This means the occupational infrastructure is expanding with demands for skilled manpower at the professional, technical, supervisory and production levels. These changes are creating different expectations of secondary schools.

Meanwhile the developed countries of the region are at the post-inductrial stage of development technology and antomation. As a result, employment has been reduced to the extent that many high school leavers are unable to get a job.

Alternative models of secondary education are required to cope with their needs. In both the developing and the developed counries of the region there has been an increasing mismatch between the products of secondary education and the economic, political and social demands of the community. In most countries, the educational systems are being reviewed in an attempt to devise more appropriate objectives of secondary education.

The role of secondary education

There was substantial unanimity among the forum participants on the role of secondary education to-day and in the future. The end product should be a healthy young person with self esteem, concern for others and with the knowledge, skills and motivation to pursue learning as a life-long process. This person should be prepared to fulfill multiple roles as a mature individual, a responsible citizen, and a productive member of society. He or she should be equipped with the knowledge and skills necessary for participation in life in a repidly changing technological world.

With this end product as a goal the major role of secondary education is to help students grow towards self-actualisation – to develop the full potential of every individual. Schools should offer the knowledge and skills appropriate to the needs and abilities of *all* students. They should be extended both mentally and physically to reach their own standards of excellence.

A major role of schools is to produce students who can reason and make informed judgments in a rapidly changing world. The highest priority in the past was placed by schools on the skills of literacy and numeracy. Increasing attention is been given to personal development which emphasises the social responsibilities of people living together in communities. As a result, communication skills, skills for social living, problem-solving skills and co-ordination of physical and mental skills are all seen to be important. Schools also have the role of preparing students to contribute to society in a productive way. This requires the development of vocational and life-skills through forman and non-formal approaches.

The acquisition of knowledge, the development of skills and values and the formation of attitudes are all inter-related. Effective classroom programmes integrate these aspects. All subjects of the curriculum promote the development of the ability to reason, the ability to use language effectively, and social and emotional maturity. Through the study of mathematics, science, social studies, the arts and other aspects of our intellectual, social, and cultural heritage, and by observing, listening, reading, writing and speaking about them, students are helped to learn those skills and abilities mentioned above.

Teachers should therefore, develop programmes which enrich young peoples' experiences, and stimulate them to widen their horizons and to use their natural curiosity. The activities planned should help to foster students' learning and teach them to co-operate with and learn from others.

Objectives of secondary education

The objectives of education are the tasks required of schools in carrying out the roles designated above. The participants in the forum found it useful to classify objectives into three groups. General objectives are those which were found to be common to all countries in the region. They tended to be long term goals which have changed little over time. Specific objectives state in more detail how the general objectives will be achieved.

General objectives

a) To provide equity for all young people to obtain from a secondary education the knowledge and skills appropriate to their needs and abilities. This objective endeavours to oversome elitist education;

b) To be a means to achieve national unity and national objectives of development;

c) To serve as an instrument for raising the quality of life of the people;

d) To serve as a preparatory stage for those who work wish to pursue higher/professional education and training;

e) To imporve learning through the use of both formal and non-formal approaches to education, using modern technologies and aids;

f) To establish close linkages with the community with a view to make students aware of the real life situations and to check the alienation that exists between education and environment;

g) To establish close linkages with industry, agriculture and other places of work with a view to provide meaningful courses and adequate preparation for employment and self-employment; and

h) To use a futuristic outlook and to pursue programmes keeping in view the immediate as well as long term perspective of development – economic, social, political, scientific and technological.

Specific objectives

1. To develop the skills of learning and living to:

   a) develop the ability to communicate;

   b) encourage the urge to enquire;

   c) gain personal satisfaction through effort in learning and accomplishment;

   d) develop an appreciation of problem solving methods; and

   e) help people to develop their ability to respond to experience in creative, inventive and considered ways.

2. To develop appropriate values such as to:

   a) become self-reliant and to develop a sense of responsibility for personal and group actions in ways that show care and consideration for others (e.g. respect for the law);

   b) accept the right of individuals and groups to be different providing they do not impinge excessively on the rights of others;

   c) help students to develop a sense of personal identity and self-worth; and

   d) help people contribute to society in a meaningful, productive and satisfying way by preparing them to enter the world of work and adult life.

3. To provide the knowledge required for a satisfying and as a basis for further education to:

   a) develop an awarencess of the factors of their non-living and living surroundings;

   b) help people to develop and appreciation of the contribution that the arts and technologies have made to the lives of people;

   c) provide experiences of the arts and science appropriate to the community;

d) develop in students an understanding of their nation, their culture, history and way of life;

e) help people to develop an understanding of people from other countries and cultures and their relationships with them; and

f) develop their understanding of human dependence on natural and man-made environments, and responsible attitudes to the use of resources.

Consequences of changing roles and objectives

It was evident to participants that as new roles for secondary education emerge, there must be changes in the objectives, organization, curriculum, teaching and assessment methods and instructional materials.

The broad scope of the changes likely to be set in motion as a consequence of a new model of secondary education is presented in Table 1. In turn these suggested a number of issues and growth points which became the focus of discussion.

Issues related to secondary education

A number of issues related to secondary education emerged from the Forum. Some of these were particular, but many of them were shared by all the participating countries:

1. **Resource issues.** The major issue affecting secondary education in most countries is a lack of finance to provide adequate schools, teachers and equipment for the increasing number of students wanting secondary education. The demand for secondary education has grown rapidly with the expansion of facilities at the elementary stage and also with the increasing awareness of the masses about the utility of education. Special attention is also being given to education for girls.

Although the average transfer rate of students from elementary to secondary schools is still as low as 34 per cent for Asia as a whole, the numbers transfering have increased enormously. In India, for example, the number of students attending high school has grown from 4 million in 1947 to 14 million in 1985 while in China the numbers rose from 1 million in 1948 to 60 million in 1980.

The solution to providing resources for such large numbers may be the use of modern technology to transmit information. The Indian satellite (INSAT) has provided television coverage of 70 per cent of the nation in one year.

Instruction through television and computer aided learning appear to be more economic methods of using limited financial resources than training teachers.

Another method of saving financial resources is the establishment of linkages with industry, agriculture and other establishments for skill and vocational training. Building workshops for vocational courses in high schools and providing hardware is highly expensive and not necessary when community resources are readily available.

Table 1. Towards an integrated approach

Role of secondary education	*Objectives*	*School organisation and climate*	*Curriculum*	*Teaching/learning strategies*	*Monitoring and evaluation initiatives*	*Instructional materials*	*Goal or output: the ideal person*
OLD MODEL To prepare an elite group of students for university	To provide knowledge, memory training and develop obedience	Centralised Formal Structure Authoritarian Rigid Academic orientation	Prescribed Academic disciplines Specialised	Expository	External written examinations Evaluation of students only.	Textbooks	Literate Knowledgeable Obedient
NEW MODEL To prepare all students for a satisfying creative life, contributing to the growth of a humane, caring, global society.	1. Values . Self Esteem . Excellence . National . Identity . Productivity 2. Knowledge . Diversitified . Scientific 3. Skills 1. Interpersonal 2. Societal 3. Vocational 4. Cognitive 5. Practical	Towards decentralization Non-formal, Flexible. Greater autonomy. Caring climate. Pastoral orientation Community Involvement.	Balanced between prescribed and liberal. General with increasing academic and/or vocational specialisation is senior forms. Interdisciplinary approach.	Inductive – inquiry oriented flexible Student participation Project approach Technological – aided instruction	Move towards internal assessment with an external component Criterion based. Testing of a range of skills and the ability to apply knowledge. Evaluation of students, programmes and institutions	Locally produced resources. Field based resources. Technological Equipment T.V. Video Computers.	Competent Creative Altruistic. Sharing. Autonomy.

The integration of education and productive labour is proving an effective way of financing secondary education in China and India. This means the general schools run affiliated factories, farms and community projects. These school run enterprises, produce good quality products, the sale of which contributes finance for educational purposes.

Economies are being made in some parts of the countries in Asia by designating secondary schools as resource centres for surrounding elementary schools. Extending the school day and the school year to make better use of facilities is another approach to economic efficiency.

2. **The issue of imbalances.** A major concern in Asia and the Pacific is the imbalances in the provision of secondary education between rural and urban areas, developed and developing nations, between males and females.

All countries are aware of these inequities and are taking positive steps to bridge the gaps.

3. *The quality of teachers and teaching.* In all countries at the Forum, difficulties are being experienced in improving the quality of teaching. In-service education is seen as a major issue. Pre-service training tends to be prescriptive in approach. Teachers use formal expositioning methods based rigidly on textbooks in many countries. They need to use more ingenuity and produce more of their own resources which should be flexible in approach.

A serious deficiency among secondary teachers was perceived to be their inability to divide classes up into smaller groups and to organise learning activities appropriate to each group.

A major abstacle to the improvement of teaching is the high pupil-teacher ratio in most countries. In Republic of Korea and India, classes are as large as 60 or [illegible] students. On the other hand in Australia and New Zealand, the teacher pupil ratio ranges from 1: 12 up to 1: 30. It is very difficult for teachers to use non-formal approaches with large classes.

4. **School climate.** The future needs emotionally and socially well-adjusted young people capable of establishing caring relationships with other people. The authoritarian formal organisation of schools creates a climate which is not conducive to the development of these qualities. The need was recognised at the Forum for structural changes to be made in schools. These changes include a reduction in student-teacher contact time, more provision for individual study, a more adult relationship between teacher and student and improved guidance and counselling systems. A greater emphasis on the pastoral role of teachers is required in the years ahead.

5. **Curriculum issues.** The technological age requires people who are competent in science and mathematics. This emphasis generates the need for creative laboratories and a demand for Competent teachers. Efforts to solve this problem include the setting up of science high schools in some countries, the design

of low cost equipment, and the use of television teaching self-learning packages in others.

The age of science and technology has brought with it the need to humanise the school curricula. In modern factories people interact with machines and computers instead of interacting with other people.

At home the amount of interaction among family members has decreased with the advent of television. Schools therefore have to give greater attention to the development of skills in interpersonal relationships.

A major issue discussed by the Forum was the need for diversification of the secondary school curriculum. In some countries academic disciplines dominate the timetable. While diversification was perceived as desirable, it was considered that constraints were needed to prevent "curriculum anarchy" which results from a "smorgasboard" structure. The concept of a core of areas of study needed to ensure equity was accepted. The value of integration among subjects through a thematic or project – centred approach was seen as a partial solution to the problem of prescribing the curriculum yet allowing freedom of selection for content studies.

A curriculum issue was the extent of centralisation of control. A need was expressed by most countries for less centralisation and more freedom for schools to cope with their local situation. There was a desire for more local input and a less prescripture approach to curriculum design. The solution was seen in the development of local modules of study based on centralised curriculum guidelines.

6. **Assessment issues.** In most countries secondary education is constrained, if not dominated by a rigid system of norm-referenced external examinations. A prerequisite to any significant change in secondary education is a change in the form of assessment. The use of internal assessment for at least a proportion of the final grades would enable students to be given credit for a range of practical, oral and social skills. The most desirable goal would be the development and adoption of a criterion – based assessment, grading and reporting system. Training teachers to move towards such an approach and educating the community about such a system should be major goals of secondary education over the next decade.

Additional issues

In addition to the major issues relating to resources, curriculum and teaching there were a number of specific issues perceived as being significant in the region over the next few years. These issues were;

1. The role of private institutions versus the state in the provision of secondary education;

2. Autonomy, accountability and the accreditation of schools;

3. The determination of selection criteria for enrolling students at high schools;

4. Whether schools should be educating for national unity or the acceptance of cultural diversity – what is the best path to a harmonious society?;

5. The need to educate students for social responsibility – caring for others and for the environment, while avoiding value conflicts with the community about the role of schools in handling value laden issues; and

6. The problem of educating for individual self-fulfillment balanced against education for social responsibility.

Growth points in secondary education

Growth points in secondary education stem from major external changes (structural changes in the economic, social and political system, major new technological and scientific inventions) and internal reformed (changes in educational philosophy, new educational technologies, new organizational models). The major growth points in secondary education in the countries in Asia and the Pacific fall into three main categories access and equity, relevance and political structures.

1. **Access and equity.** The provision of equal access to all sections of the population and to rural and remote regions within the countries of Asia and the Pacific is the greatest area of growth. For many student's parents in these countries, secondary education served as a path from poverty to some prosperity.

From their attendance at secondary schools they were able to attain academic skills which enabled them to cope not only with social problems but also with a rapidly changing employment situation. Their status was raised through this level of education. They were able to use skills, knowledge and value for an adequate pattern of living through-out their working life. To-day governments of developing nations are being called upon by parents to provide secondary education not only for their children but for all groups so that a more prosperous and hamonious society will grow. The means by which this increased access to secondary education is being achieved are:

a) *Non-conventional approaches and distance education.* Another special feature of the growth would be that non-conventional approaches will have to be adopted as the formal system may not be able to cope up with the tremendous pressures for want of adequate resources. Part-time and own-time education, distance education, evening schools, sunday classes, vacation courses, open schools, etc. will, thus, have to be provided on a large scale to meet the situation.

A beginning has already been made in this direction in some countries. The traditional belief that only university or college students are mature enough to take advantage of correspondence or open university systems does not any longer hold good. Actually, the self-learning concept is not confined to university stage alone; it is now established beyond doubt that open schools and distance education techniques are equally successful at the secondary and senior secondary stage. The experiment of Open School in India, has proved to be a successful innovation and is meeting the needs of those who were either left-out or pushed out of the formal

schools for socio-economic and cultural reasons. This is particularly so for disadvantaged groups, island countries and remote areas in larger countries.

This new approach to teaching-learning would necessitate restructuring of secondary education in all countries of the region so as to recognise and provide for non-formal and open-learning systems on a massive scale, not only as support systems but as complementary and alternate systems with inbuilt provisions for inter-linking and bridges between the formal and non-formal, or so to say between the traditional and the non-traditional system of education.

The non-formal system being highly flexible and open is more capable of accepting and adjusting to the new technology in teaching-learning such as radio, television, audio-casettes and video.

This, however, is not to suggest that open-learning system in any way would displace the formal schools which would by all means continue to have their importance and utility. The de-schooling or the school-less society is yet a far cry and whatever some sociologists, pedagogues and futurologiests may argue in support of it, both formal and non-formal systems will come to stay in the foreseeable future.

b) *Technological education.* Educational television is already a reality in most parts of Asia and the Pacific but refinements in programmes, tiinetabling and strategies in viewing these programmes is possible. Wider access is possible in the future. Its use for the in-service training of teachers will grow as suitable programmes become available. The use of educational video tapes has virtually superseded live television in Australia and New Zealand, but the cost factor will delay their wide-scale use in developing countries in the immediate future.

Increasing use of microcomputers will be another growth point. Computer assistance instruction is developing as improved software becomes available. In the meantime computer leteracy programmes are being introduced or extended in may parts of the region.

Technological changes have led to the growth not only of microcomputers, television, videotape, and teleconferencing but far more imaginative software (simulations, games, interactive video disk, client-controlled learning systems) to facilitate learning, distance education and to cater for the special educational needs of physically handicapped, ethnic minority groups and students seeking remedial help and enrichment.

c) *Resource centres.* The growth of resource centres (eg Teacher Centres in Australia) is a significant development in providing access and equity to secondary education in the region. They not only permit more efficient use of equipment and materials but serve as an effective method of improving the quality of teaching.

d) *Networking of schools and community institutions.* A growing practice throughout Asia and the Pacific but particularly in Korea, Thailand, the Philippines and India of clustering schools and establishing links or networks among them is improving professional standards through co-operation and local leadership.

A significant growth point is the extension of these linkages to take in industry, agriculture and community institutions. While this is already happening particularly in China and India, in other countries secondary schools will have to establish close links with the community. Today, in many countries, most secondary schools do not realise their social role and exist in isolation. The Extension work has thus to form an integral part of a secondary school in future. The school cannot afford any longer to remain confined to its set curriculum and consequential instructional work within the four walls of the school. A close interaction of the school with the community is, called for.

This means that a secondary school needs to out-reach and 'adopt' a nearby village, or a slum, or a hospital, or an orphanage.

That not only provides the students with an opportunity to be closer to the real situation but also enables them to participate in the development of the society. It also provides a fund of experience and helps them to be useful members of the society.

2. **Relevance.** Many of the growth points in secondary education are occuring in response to the need for increased relevance. There is growing pressure to make high school education more relevant to the needs of the individual and of society. The countries of Asia and the Pacific possess the world's largest concentration of the poor. A shortage of trained manpower is a serious obstacle to largescale development of these rural nations. A diversified general education has proven irrelevant in these circumstances. Some of the growth points to cope with the problem of relevance are:

a) *The vocationalisation of education.* Varied methods are being used to make the curriculum more relevant to the world of work. In some countries compulsory work experience has been made a part of the curriculum e.g. Socially Useful Productive Work in India. Work experience programmes have been introduced in Thailand, New Zealand and Australia.

b) *The establishment of integrated specialised high schools.* Some countries (e.g. Republic of Korea) have responded to the demand for more relevant education by establishing specialised high schools and organising them in an integrated way. Vocational and technical high schools provide increasing numbers of "middle level" technicians. Middle level technicians are a social prerequisite for the economy of the countries in the region. They provide own economic basis for social development. This aspect has now been categorilly stated in socio-economic plans of the countries in the region for at least a decade.

In Korea Agricultural high school students are working as agents in the rural community development under assistance of the Bureau of Rural Guidance in co-operation with the College of Agriculture, Seoul National University. Enrolment of students at the science high schools has promoted scientific and technological creativity and competence in these countries and has also supplied trained manpower sources e.g. Korea and the Philippines.

3. **Growth points in teaching approaches.** Through a process of gradual decentralisation teachers are now developing their own strategies and curriculum for local conditions e.g. the Papua New Guinea SSCEP project School-Based Curriculum Development in Australia and the New Zealand Integrated Transeducation Project. This growth calls for school-based co-operative efforts at upgrading professionalism (e.g. Ashburton College in New Zealand). A certain amount of local research is evident in these more realistic and relevant approaches to teaching.

The rapid explosion of knowledge and developments in educational psychology and assessment are heralding the emergence of a new psychology of learning and assessment which is based on life cycle developmental theories and cognitive/information processing research rather than behavioural psychology and the psychology of differences. Curriculum design may in the future be based on our understanding of ways in which integrated structures of knowledge and general skills develop in areas of competence considered important by the society. The emphasis may shift from designs which separate content and process, thought and action, theory and application towards integrated development and assessment models sensitive to the ways in which broad areas of competence develop as a result of systematic instruction and experience. (e.g. in assessment: norm → criterion referenced → developing competence).

This change in the concept of secondary education would mean greater emphasis on problem solving more opportunity for project work and inter-disciplinary approaches, and more flexibility in the choice of subjects, timings, methods of teaching, instructional situation, use of modern teaching aids, computer-aided instruction and self-learning packages.

The secondary school teacher will need to change his teaching practices and teacher training – both pre-service and in-service – will have to gear to the new requirements. Unless the teaching profession keeps pace with the changing scenario, the gap between what the secondary education is expected to perform and what it actually delivers would make the secondary school counter-productive.

One of the major areas of concern in secondary education is its examination system which has become too unwieldy due to the importance the school leaving certificate assumes. In most countries, there is an external public examination at the end of the secondary education and the certificate that is awarded is more or less a 'passport' for jobs, admissions to higher studies and even matrimony! There is corruption in examinations. Apart from large-scale cheating which has a highly adverse influence on teaching-learning, question papers are sold in open markets. The examinations which earlier used to dominate the classroom are being replaced by internal assessment, goal-based and criterion-referenced assessment and assessment of work done in the community.

4. **Humanizing education.** A significant growth point in secondary education in the developed countries of Asia and the Pacific is the focus on school climate and the relationships between teacher and pupil. Rutter's research has shown the importance in learning of environmental factors. Greater emphasis is being placed in

in-service programmes on the improvement of teachers' interpersonal communications skills. The pastoral role of the teacher is being developed to balance his/her instructional role.

Demographic changes have meant a declining youth population and an increasingly aging population. This may lead to new alliances between groups excluded from the labour market – particularly youth and the aged sharing resources, skills and providing services and support to one another as schools become centres for the co-ordination of human services. In addition, this has meant a stable and aging teaching force and thus professional renewal and the expansion of non-promotion leadership roles in an education system with few opportunities for promotion by seniority. As such, school-focussed professional development, action research and the development of schools as critical-reflective learning communities may represent a growth point for the future.

5. **Political structures.** Fundamental change in the economic-labour market structure is leading to the development, particularly in Australia and New Zealand, of integrated youth policies (which incorporate secondary education, technical education, income support and training schemes) aimed at protecting the rights of young people.

Growing disenchantment with big government and bureaucracies is leading to a push towards lower taxes, deregulation and privatisation – removing regulations, red tape, constraints which restrict and regulate industry and schools. As the willingness of the state to continue to support education at its current level flags, parents and communities are being asked both to become more involved and to bear more of the costs of secondary education. Both policy and reductions are fostering greater sharing of resources and networking involving state and non-state schools in a region, and the regionalisation and co-ordination of all human services (health, social welfare, Commonwealth Employment Office, Training Schemes, Voluntary Youth Organisations as well as secondary schools)

Finally, at the international level we may see the formation of new alliances as old cartels break down (eg. ANZUS) and the gap between the economically and politically powerful and poor nations widen. In particular, developing countries will need to co-operate politically in sharing information and taking action. They will become increasingly critical and aware that their capacity for growth, self-sufficience and independence is not unaffected by the defence policies, consumption habits, exploitation and vested interests of those who are powerful. Both within and between nations, the development of a more just and equitable world will depend on an enlightened and politically active citizenship – one in which adolescents come to understand how the system operates and to learn legitimate and socially responsible ways in which injustice and exploitation can be attacked.

Chapter Six

IMPLEMENTING NEW MODELS: CURRICULA, MATERIALS, TRAINING STRATEGIES AND EVALUATION

Gazing into the crystal ball of the future, generating new frameworks, models, objectives, issues and growth points often proves to be a stimulating exercise for educational planners and experts attending workshops and Forums. But in the final analysis, dreams must be converted into reality.

In designing new curricula, difficult decisions must be made about values, instructional materials and resource allocation. New instructional materials, technologies and strategies have to be designed, trialled, monitored, revised, evaluated and adapted to particular contexts. Teachers need to be trained or retrained and supported in their efforts to translate new models into classroom and school practice. The community, locally and nationally, needs to be informed of, and contribute to, the formulation and refinement of new models of secondary education.

Teachers, training institutions, universities, employers and communities will not play a vital and constructive role in the reform of secondary education if what is to be done is not clear and widely accepted. In particular, those who must implement new policies and programmes must be convinced that the new model is feasible, desirable and superior to the old. School principals and teachers, in particular, must see that the rewards (in terms of improved education and relations with the community) are commensurate with the effort required.

In this chapter, we begin the task of exploring the progress being made in developing the infrastructure necessary for the implementation of the new models of secondary education merging in the region. We are concerned then with the exploration of the *means* available to achieve the *ends* being sought by new models of secondary education – with the curriculum plans, teaching and training strategies, instructional materials, monitoring and evaluation procedures necessary for the implementation and renewal of the models being developed by countries in the region.

The curriculum

1. **Educational roles.** Curriculum design normally begins with an analysis of the current and anticipated situation to determine how effectively secondary schools are fulfilling their essential educational roles and whether changes in role priorities are called for. It should be recognized that the broad roles of secondary education have not changed substantially over the years. Secondary schools have been and will continue to be, expected to prepare young people for adult life as citizens, workers and to develop their abilities and individual potential. But priorities change across time, and vary from one nation to the next. Thus we can expect

qualitative shifts in the role of secondary education and variations in specific objectives in accordance with each countries particular needs and developmental path. For example, in most Asian and Pacific countries preparation for higher education is no longer the only role of secondary education; more emphasis is being given to the role of education in facilitating belanced, individual development of the type needed for each country to adopt to a changing, complex world.

2. **Grouping of goals.** At present, curriculum developers in the countries represented are in a better position to provide a coherent and reasoned account for the curriculum changes proposed. This is because a systematic approach to the problem of deriving the curriculum from stated and agreed national and educational goals has been adopted. However, there exists a wide range of possible goals and objective for secondary education. In order to focus on national priorities it might be useful to group goals or provide them with suitable "handles". Example of clusters of curriculum goals suggested by participants were as follows:

a) *Sociological.* Secondary curricula aimed at socialisation of adolescents including citizenship qualities; moral values; work ethics; community involvement; co-operation and caring, with a focus on key elements of the culture and national priorities and cultural reproduction.

b) *Psychological.* Secondary curricula aimed at facilitating to the fullest the development of the individual; with an emphasis of the application of psychological principles in designing curricula to foster learning; congnitive, emotional, effective and social developments.

c) *Productivity.* Secondary curricula aimed at contributing to economic development by equipping adolescents with the scientific technical knowledge and communication skills needed in the workforce, work and entrepreneurial skills; problem solving; career guidance and exploration; work experience and community improvement; with a focus on employment, economic production and human resource development.

d) *Personal.* Secondary curricula aimed at improving the quality of life by promoting health and physical fitness; aesthetic and cultural appreciation and interests; knowledge and skills needed for self reliance and family living. There are, of course, other clusters of goals (eg religious) which also offer a wider perspective of the goals of secondary education and enable priorities to be adopted in accordance with national priorities. The criteria then which are to be used in making decisions about precisely which areas of content and what types of learning experiences are to be included in the curriculum should reflect the particular mix of priorities of a given country.

3. **Curriculum study areas.** From such broad categorizations of roles and goals, curriculum developers derive specific areas of study, skills to be developed and outcomes to be achieved. For example, Philippines, in developing a conceptual framework for the secondary curriculum of 1989, began with an analysis of the legal basis of education, the demands of society in the next decades and the needs of

adolescents, and three broad curriculum groupings: humanities, science and technology; values, and productivity skills for self reliance, within these and using information about the outputs of elementary education, the requirements of higher education and the demands of the world of work, new curricula are to be developed in such subject areas as english, science; mathematics; home management and technology; work experience; philipino; history, government and economics; physical and expressive arts; and values education.

4. **Core curriculum.** Within every society there are key elements of the shared culture which must be transmitted to the young if they are to develop in a balanced, overall way, and if the society is to survive, function effectively and adopt to changing circumstances. From such a premise, the notion of a core curriculum arises. Within such a core, all students are exposed to a set of common learning experiences aimed at equipping them with essential knowledge, skills and values necessary if they are to participate fully and productively in adult life. Moreover, all students need this common base of learning if the ideals of universal education and equal opportunity are to be realised.

A valid and key question at this point, especially in developing countries, is whether the core is, by itself, sufficient to achieve the goals of education. What part and roles do electives play? At the upper secondary level at least electives have been included to allow for specialization demanded by universities or the job markets. At lower levels, electives have been used for the purpose of consolidating the core, for subject-linked enrichment, for subjective-free enrichment based on interests and aptitudes. Recent experiences have shown that the provision of too many electives at the lower secondary levels diverts attention from the core. There is a trend to be selective in the provision of electives, both because of the cost and the educational consequence.

5. **Formal and non-formal.** A major development in curricula design and development has been in the linking of the formal and the non-formal components of education. The non-formal component is seen as an integral part of the formal curriculum. It is seen as an opportunity for reinforcing values, work skills etc through well planned community service programmes, wholesome recreation and the persuit of personal hobbies. It provides the opportunity for developing social skills and introducing inter and multi disciplinary approaches. The non-formal area needs a great deal of planning, organization, support and supervision in order to relate it meaningfully to the formal curriculum as experience in the PNG secondary Extension Project has shown.

6. **Content selection.** The selection of content for the various study areas and subjects represents a crucial step in this exercise. There has been a necessary shift away from traditional disciplines in order to select content that is relevant to the goals, curriculum areas and skills identified in the curriculum design. Traditional boundaries of disciplines are no longer appropriate in the emerging situation. The developmental psychology of students has to be matched with the learning and teaching demands imposed upon them. These imply that a new way of going about selecting content is needed.

A possible approach for the building up of the content and strategies of a study area is as follows:–

The curriculum has to be based on the foundations of the cognitive – developmental psychology of the student (what the student knows and can do). The content to be selected is to be linked to such a foundation, but the content itself is to be related to a situation chosen because of its potential significance for learning and achieving the objectives of secondary education. Preferably, the situation should have grass-roots relevance to the student and the community.

In many subject areas, particular processes characteristic of the area are involved in solving problems. These processes (such as the scientific approach) need to be built into the situation and content if the appropriate competencies are to be established.

The content, process and situation are then to be applied so that the application improves understanding, increases efficiency and productivity. This mode of selection lends itself to interdisciplinarity and multidisciplinarity approaches. It also places a heavy demand upon the teacher. But the approach is likely to render the curriculum more relevant to local needs.

The SSCEP programme of PNG examplifies the approach very well. The extension of core subjects to situations relevant to the local community is attempted. Such an approach has wide applications especially in developing countries.

7. **Future orientation.** Looking ahead, there are indications that curricula emphasis in future world be centred upon two basic aspects; first, in humanizing the curriculum. By this is meant drawing together knowledge, skills, attitudes and values through various subjects, study areas, programmes and projects in order to improve human relationships, enhance community involvement and promote citizenship qualities. The humanizing effort is to be linked with improving the quality of life not only materially but also morally, aesthtically, culturally and behaviourally. The second aspect would be centred on productive work, concept development and problem solving abilities. This would include creativity and innovation. A result of the problem solving process would call forth the ability to make systematic projections into the future, generate alternatives, and generally be better adaptable to new challenges and developments.

Three kinds of inputs are considered necessary for this approach. Selective information and guidance has to be made available. Information dissemination through the use of new technologies such as the Computer, TV, Satellite and Video tapes have an important role in this respect.

Secondly, situations where positive human interactions become possible have to be deliberately created in school life. This is to give substance to the humanizing process.

The outcome of productive work, problem solving and projections are to be directed towards the humanizing process.

Thirdly, a shift away from the detailed accumulation of facts to the development of an understanding of generalised concepts and principles will be needed. More new knowledge has been generated in the area of science and technology alone in the past two decades than in the entire history of mankind. If all that is learned is factual content it will soon be obsolete. Generalised patterned learning facilitates transfer and assists in the development of concepts which can be utilized in a wide variety of situations. Learning utilizing inquiry and real life situations provides for stimulus similarity between the learning situation and the transfer situation and hence creates the conditions for meaningful learning. In several countries in the region, science curricula and materials are being structured around situations and a learning cycle format which involves exploration of a new problem area, intervention in the form of observations and inquiry and application of concepts and skills in solving problems in the community. Curriculum materials need to be designed in ways which help students to acquire a knowledge base consisting both of key concepts and the ancillary knowledge needed to decide when and how to use them in solving significant problems.

Training strategies

New strategies of training are required to be adopted in view of the new thrusts in Secondary Education. Since there is greater emphasis now on the creation of a caring environment in schools, on creativity and productivity (with the consequential introduction of work education), both pre-service and in-service training will have to cater for these requirements. A linkage will also have to be made with the places of work, so that practical in-service training in the concerned vocations can be imparted to teachers on a continuous basis. This is particularly relevant in the case of a country like India which is proposing to embark upon the Programme of vocationalisation on a large scale.

The training of trainers should be given special attention – not only in the context of existing programmes, but also with reference to the new areas such as teaching through computers, television and radio.

Four types of training needs have been identified. Pre-service teacher education, training for specific programmes and purposes, upgrading subject content and the continuous development of professional competencies. The methods used to meet these needs vary depending on each type of training and the level of personnel being trained.

1. **Pre-service teacher education.** This is mainly achieved through pre-service courses conducted in universities and teacher training colleges, or by other formal programmes mounted by the Ministry of Education. Trainees specialize in one or more subjects which are taught in secondary schools.

The problem with the pre-service programmes are that they are usually traditional and discipline-based. Programmes do not adequately keep abreast of new developments in the curriculum, new technologies and innovations. There is always a time lag between training and implementation and new graduates often have to be retrained before they are able to cope with new programmes.

Much more liaison and co-ordination is required between the Ministry of Education, university training departments and teacher training colleges. Orientation and training programmes need to be provided for teacher trainers as well, at all levels. Early involvement of teacher trainers during the planning and development phases of new programmes and models would help a great deal. Written guidelines and descriptions of the programme need to be widely distributed. Early notification of the intended programme and implementation schedules need to be announced. A high power co-ordinating body that liaises with all agencies responsible for pre-service and in-service training and educational policy would be able to achieve this.

For example, in Australia, national, state and regional co-ordinating committees have been set up to oversee teacher education and to ensure consistency with national goals.

At the Regional level in the Philippines there are consortium of teacher training institutions. The rationale for having teacher training institutions as "Schools of Excellence" and regional training centres is to strengthen linkage between pre-service and in-service. At the province or city level, the "leader" institution would service approximately 245 schools in a particular subject area. The National School of Excellence, and Regional Training Institutions serve not only in-service training functions but curriculum development functions as well as management resource centres. Training lasts for five weeks in summer using training modules, per teaching and micro-teaching approaches. The scope of this training includes: strategies, content, government priorities, values development and innovation in secondary education.

Teachers are given service credits, allowances or academic units for attendance.

2. **Training for specific purposes.** Existing teachers in schools need in-service education when new policies of secondary education and associated curricula, technologies and assessment procedures are introduced.

Countries in the Asian and Pacific region have embarked upon a number of innovative programmes that involve new or modified content, different or improved teaching and learning strategies, that might not have been covered in pre-service or in-service training programmes.

In-service courses, workshops/seminars etc are normally conducted to orientate and train key personnel and teachers. Consultant teams are also provided from time to time to work with teachers.

The weakness commonly identified with these methods are with respect to the unsatisfactory multiplier effect; rejection, dilution or distortion of intended goals, content and strategies; insufficient specialized background, knowledge and skills of teachers; and an inability to develop local adoptations and innovative strategies of the curriculum.

Suitable approaches adopted in some countries are self learning modules and other written guidelines, master video and audio programmes with accompanying

guidelines to assist in training – consultant teams, area of network and school-focussed professional development programmes. Each of these approaches has its strengths and weaknesses, but in some countries evaluations of in-service indicate the value of team and school-based approaches, and case studies of successful innovations.

3. **Content up-grading and enrichment.** In most countries of the region teachers, though trained, need further formal programmes to strengthen their foundations in content. This is especially true if new innovations are being introduced which presuppose knowledge and competence in such areas as the educational use of computers or curriculum development.

In-service courses, individualized programmes, on-the-job guidance and coaching by colleagues and superiors, attending formal academic courses on a part-time basis are methods being practiced at the moment.

Teachers requiring this sort of reinforcement usually find that there are few programmes being organized on a regular basis. Left to their own devices with little guidance, they lack initiative and motivation to continously update their knowledge and skills.

Regular structured and supervised programmes are necessary at national sub-national and school levels in order to attract and guide teachers along. In addition specially compiled content digests in the form of self-learning modules and using media facilities such as TV, Radio, and the computer would greatly improve the situation.

4. **Continuous professional upgrading.** This is a need that is increasingly being felt by most countries of the region, especially when qualitative improvements are sought and innovations are more frequently being implemented.

Current practices involve on-the-job school-based orientation and guidance, short courses, group work, self learning approaches, inter school co-operative effort, contributions of resource centres and national television broadcasts for teachers (eg. India and Australia).

Again the problems associated with these are the irregularity of such programmes and the absence of long-term plans in some situations. There is very little external help available either. In each high school, a senior staff member should be held responsible for teacher induction and in-service education within the school.

Regular and formalized long-term programmes for teacher improvement need to be introduced. Refinements to group work need to be introduced. Guidance and supervisory roles need to be clearly assigned to senior staff (see PNG Handbook for High School Inspectors). Self learning modules and other resource materials need to be made available and teachers guided in their use (see Student Assessment Project in Australia). Teachers are to be involved in well-planned school programmes and projects. Self and group methods of assessment could be adopted and teacher registration requirements linked with involvement in professional development programmes.

Secondary education for the future

The above needs are not new but there is a strongly felt need to improve strategies in training for special purposes and for strategies and methods for school-based upgrading of teacher professionalism.

Professional up-grading must not only be for teachers. It must reach all levels of school staff and also inspectors, curriculum developers and curriculum administrators. Unless all work together, the goal can never be reached. All need to pull together and compliment one another in their work.

There should be an overall national and regional plan for the professional upgrading of different levels of educational personnel. A possible plan suggested for the Philippines includes training for:

Bureau of Secondary Education (Ministry Proper).

- Degree programmes at local or foreign universities.
- Participation in regional/international conferences.
- Observation grants to other countries.

Chiefs of Secondary Education at Regional level, supervisors and principals of public secondary schools.

- Trained at the national level on a staggered basis by the Office of the Deputy Minister for Personnel in co-ordination with the Bureau of Secondary Education.

Teachers and departmental heads.

- Training networks include the national school of excellence and regional training centres.

School improvement programmes.

As well as continuously improving the knowledge and competence of individual teachers, the implementation of new models of secondary education demands changes which involve groups of teachers (eg. subject departments), the staff of the school as a whole, and the school community (parents, teachers, local employers and industries). It is often difficult for a single teacher returning from a short course run by a central authority or curriculum centre to implement an innovation. Major changes in the role of secondary education and the curriculum (eg. PNG Community Extension Project, Australian Participation and Equity Programme) demand changes in school administration and policy, timetabling, staff allocations and the co-operation of bodies outside the school (factories, employers, unions, village leaders, primary schools, tertiary institutions etc.).

It is essential when seeking to implement new models to develop a School Improvement Programme which involves teachers, school administrators and the school community in the planning and implementation of innovatory programmes. New skills and shifts in attitudes will be needed of the principal and administrative staff in exercising effective leadership (rather than bureaucratic controls) within

the staff providing the support and reward structure needed if teachers are to continue to work at implementing and adapting innovations in ways which achieve goals valued by students, secondary teachers and the wider community. In Australia, the professional development of principals has assumed a priority for this reason.

The type of training provided in a school improvement, pre-service or teacher professional development programme needs to be congruent with the goals of the new model. Where the knowledge and skill base of teachers is to be strengthened or up-dated, an assessment must be made of the needs and current background of the teachers. An appropriate structured programme incorporating the underlying theoretical or philosophical base, concrete models and examples, practice and feedback may be appropriately provided in a well-designed kit or inservice course. On the other hand, where teachers must adapt or design programmes appropriate to the needs of a given community and the goal is that of solving problems, a lecture-based inservice programme would be inappropriate: grouping of teachers might work collectively with the help of others who have the appropriate experience and expertise using an approach similar to that which they are expected to adopt with their students. For example, in Australia, some universities and colleges use an integrated school-based approach to pre-service training, rather than the traditional subject-based training programme.

Monitoring and evaluation initiatives

New models of secondary education need to be evaluated using an appropriate model. Such a model would provide information about the programme to education authorities and to the community as a whole. Evaluation reports should stimulate debate about the strengths and shortcomings of existing and emerging models of secondary education. Evaluations need to provide feedback on the context or situation initially, during the after the provision of the educational programme (Table 2).

Evaluation is an integral part of any new model of secondary education and needs to be seen as a continuous process. One component of this process involves an evaluation of the context. Thus in evaluating the student one needs to learn what the goals, expectations and needs of students in secondary schools are like and in evaluating the goals of a programme to ask whether they match those of the student and the community. At a broader level we need to monitor the degree to which the goals of secondary education are congruent with national goals.

Student evaluation. The initial evaluation phase demands that one assesses whether students have the necessary pre-requisite skills and knowledge before embarking on a programme. Programmes need to build upon the prior educational experience of students.

Secondly formative evaluation must be used in the monitoring of student progress and in diagnosing and remedying difficulties.

Table 2. Model for evaluation and monitoring

Phase	*Focus*		
	Student	*Programme*	*Secondary Education*
Context Evaluation	What are goals, expectations, needs of students?	Do goals of programme match needs of students, community?	Do goals of school/sec. education match present and new national goals?
Initial Evaluation	What do they know? Do they have skills assumed by programme?	Do programme materials reflect stated goals? Are they clear, attractive, correct?	How adequate are the facilities of the school? Has the system provided adequate in-service?
Process or Formative Evaluation	How are students progressing? What are their learning difficulties?	How teachable is the programme? What are the limitations of the materials?	How effectively is the school implementing the programme? Caring for students, linking with community?
Product or Summative Evaluation	What did Students Learn? How well?	Were the goals of the programme achieved? Were there unintended side effects?	How well has the school prepared students for its community? Is secondary education achieving its basic objectives? National goals?

There is much concern now that students progressing during their educational experience need to be monitored continuously. Such an assessment is to highlight strengths and weaknesses and pave the way for special attention if necessary which could be remedial, enrichment or pastoral. The overall development of the pupil is expected to take place progressively and this means that the pupil profile would also alter. Monitoring has also to contribute towards portraying such a profile. While certification and assessment would continue to be required, monitoring for the purposes mentioned above is now receiving greater attention.

Thirdly, terminal outcomes are to be determined. Traditionally this is based on achievements derived from test scores and set by external examiners.

Summature evaluative in the form of centralised examinations have come under severe attack in recent years. There is a great demand to overhaul the system of external examination throughout the region. It is particularly inappropriate in terms of making the teaching-learning process relevant to local situations. It also does not meet the testing requirements of Work Education which lays more stress on skill development of the children. The new system of evaluation has, therefore, to be decentralised.

A more suitable method of assessing the quality of student's outcome is at issue. External national examinations still is the norm and is probably the most

acceptable method available for selection purposes. When it is a norm referenced assessment, it tests what the student knows and can do relative to others. This brings out individual differences in abilities and achievement. For the range of educational experiences and inputs provided, such an assessment is at best, narrow.

It does not say enough of the student. There is also a shift from norm referenced assessment to a criterion based mode where the individual's status is tested in respect of specific criteria. In the latter method, quantifiable criteria are needed. While certain subjects lend themselves well to this approach, others do not. Other school experiences, formal and informal, also contribute towards development. The student's total development or profile has to be assessed and, with the present state of the art, subjective forms of assessment still have a place but these need to be systematised leading to more defensible generalizations. What is desirable in the long run is a development-linked assessment system integrating subjective and objective modes of assessment.

The criteria for acceptance into post secondary avenues such as higher education and employment shows considerable variation. In some countries nationally held examinations at the end of the secondary level and at matriculation level are the basis of acceptance. In other situations receiving and recruiting agencies conduct their own entrance or selection examinations.

Such examinations are bound to be employer biased. There has been much interest expressed in striving for some form common credentials for school leavers. This can be done either by qualitatively improving national examinations or designing national, but independent, examinations that reflect student profiles more comprehensively.

Monitoring through out a student's educational experience would have valuable contributions to make towards an overall assessment of the pupil. Such inputs, it is felt, could be linked somehow with terminal examinations for certification purposes. Monitoring implies the need for regular guidance and attention. These measures are designed to enable curative and corrective measures to be taken in good time and is based on the understanding that a student profile does not remain static but is in a constant state of flux, not necessarily always progressing.

Programme evaluation. The development of instructional programmes and materials involves an assessment of goals in relation to the needs of students and the society (context evaluation or needs assessment).

Following the preparation of programme materials a content analysis of the material should be carried out to determine the degree to which the programme activities are congruent with the goals of the programme. The preparation of the trial material is followed by a micro-level pilot project aimed at providing formative feedback.

In the Philippines once the trial edition is completed, it is tried out on a limited nationwide basis. In each school there is a pilot and a non-pilot class, the basic distinction between the two types of classes are in terms of the teachers, materials used and curriculum used.

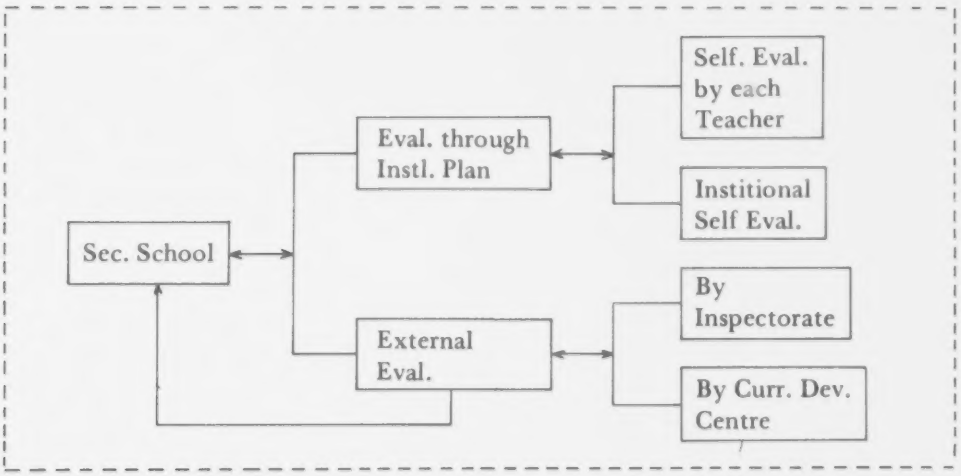
Variables	*Pilot*	*Non-Pilot*
Curriculum	1989 Project Curriculum	1973 Curriculum
Teachers	Trained	not trained
Instructoral material	Prescribed	not trained

Macro-tryout is preceeded by the administration of a pre-test and will terminate with the administration of post-test. The macro-tryout is being conducted for the purpose of: 1) validating minimum learning competences for year level; and 2) to determine the threshold requirements for the implementation of the curriculum.

Co-ordination for monitoring and evaluation is achieved through a quarterly meeting with two Regional Chiefs of Secondary Education. During these quarterly meetings, Ministry personnel consult, co-ordinate and orient the regional staff and the regional staff do likewise.

Secondary schools and secondary education. In-so-far as evaluation of curricular and other programmes at secondary stage is concerned, it can be a two-tier evaluation – micro level and macro level (Figure 4). In the first place, the evaluation should take place at the micro level. This could be done by requiring each secondary school to prepare an institutional plan. The evaluation should be done on the basis of this plan. It can adopt the form of self-evaluation by teachers of the school as well as self-evaluation of the school by the school itself. This can be supplemented by external evaluation of the Secondary School by the Inspectorate or the Department of Education concerned. In the second tier, the evaluation can be done at the macro level i.e. state/national level where major programmes and innovations are tried out, implemented and evaluated.

Figure 4. Micro-level institutional evaluation model



INSTRUCTIONAL MATERIALS

Implicit in the implementation of new models of secondary education is the need for new types of instructional materials. In some member countries a start has been made on this task. While available instructional materials may need to be utilised in implementing the new models of Secondary Education, areas should be identified where materials of a completely different kind are needed. In the case of India, for example, new materials will have to be prepared for the purpose of meeting the needs of instruction through television and computers which are being introduced in the country on a large scale at the secondary education stage. New materials will also have to be developed for the purpose of open-learning systems which are being launched.

Many of the secondary text books available today are based largely on deductive modes of instruction. They emphasise content and are normally sequenced on a hierarchy of traditional content. For deductive approaches, such instructional materials are probably adequate. Innovations in education have encouraged inductive approaches as well. Both inductive and deductive modes of instruction and learning would continue to be practical in future. Instructional material are also needed for teachers. Inductive and deductive approaches are suitable for adults as the aim is to enable the teacher to gain an understanding of a subject in the quickest and easiest possible manner.

There is however a danger in discarding completely the use of textbook materials in adopting a process approach. Students still need information in a readily accessible and structured form.

1. **Pupil's material.** Curricular approaches in future would be selective in the knowledge components included. Knowledge should however be available for specific purposes. Both the inductive and deductive methods of instruction are likely to be used on a selective basis as some study areas lend themselves well to the inductive method. Processes, valued in different disciplines, are to be reinforced and those are to be applied in identified situations. All these are to be linked to the development psychology of pupils of a particular age group and a particular level. These considerations have definite implications on the purpose and design of instructional materials.

a) *Purpose and approach.* Both in inductive and deductive approaches certain instructional objectives have to be achieved. These need to be reflected in instructional materials. Instructional materials need to contribute to specific purposes such as the following:–

A study area or its component would incorporate suitable stimuli. This is to draw attention and build up an interest in the subject, phenomena or problem. The stimuli could take various forms; narrative, audio-visual or printed. The mode is flexible but the component is important. The stimulus could be open ended and normally should generate a climate of inquiry and curiosity.

The topic or study area would have embedded concerns or problems or combinations of these. The scruting of this would be a part of the process of

thinking and reasoning. The posing of questions on supplying of clues to these issues are standard approaches. Other methods could also be considered.

The *content* or situation becomes important as it is within it that the intended instruction and learning processes would take place. Depending upon the complexity of the situation the information needed to be supplied to identify the situation would vary. If it is intended that the students should make their own investigations then very little information need be supplied beyond brief operational instructions.

Certain inputs in the form of data, information and skills would be necessary in order to apply them to a situation. Such information and skills might already have been acquired in which case what is being emphasised would be further process skills. Subtasks for acquiring and using specific knowledge and skills might be required if they are new. A combination of methods could be adopted for this purpose.

Guidance towards appropriate *conclusions,* where necessary, are to be provided. Conclusions are to be formed by the pupils to the extent possible. A very important step in the whole sequence is an opportunity for the consolidation of the learning sequence and experience. This is not necessarily to be provided at the end of the learning sequence. It could take the form of an applied exercise on another occasion or as homework. It could be a detached component.

b) *Design.* The above sequences are not in any particular order of hierarchy; they are interchangeable. These sequences have implications on the design of curricular materials. What is important is that full use be made of the wide range of curricular material available, both printed and in other forms, to enrich these sequences. Advanced technology such as computers have a role here. Herein lies a problem that many developing countries face. The range of curricular materials may not be available to teachers especially in rural areas. There would still be a need to produce printed material for the pupils. Accepting that this would be necessary, there are certain guidelines that emerge from these considerations. Curricular materials for pupils should have a basic component that guides the sequences with some content input to enable instruction to be orderly and sequenced. A certain amount of grassroots research by the teachers and pupils would enrich the resource materials. In such a component, a multimedia approach could be adopted, supplementing and supporting pupils materials.

A modular approach lends itself well to this design. Flexibility is possible and basic material for immediate needs would be available. Pictorial and graphic representations could be generously included.

The sequencing of the material needs to be consistent with the cognitive abilities and readiness of the students. A further consideration is the need to reinforce language across the curriculum. Vocabulary and language usage needs to be co-ordinated and reinforced.

All this calls for a combination and concentration of expertise in developing curricula materials such as; multimedia approaches, multi-disciplinary subject

area, graphic design, language, psychology, editing and, if applicable, publishing as well. Though this represents an ideal situation long term plans need to be developed for its realization.

2. **Teachers materials.** Teachers material required would be very much related to the teacher instructional and orientation needs referred to earlier. These are identified as follows.

Syllabi. The scope and content of certain subjects and study areas in the form of syllabi would still be needed. The syllabi should be in sufficient detail to indicate breath and depth.

Master programmes. For the purpose of ensuring the multiplier effect in training teachers, teacher educators would benefit greatly if they are provided with master programmes (written and/or in video/audio) containing case studies of teaching in action. This is to reduce the distortion and dilution of the intended programme.

Self-learning modules. Self learning modules require a high degree of self motivation. For practicing teachers understanding of new programmes could be improved through such modules. The modular approach is also suitable for subject upgrading and also for long term professional improvement.

Resource books. Subject based resource books are another form of teachers material which would give an overview of instructional strategies together with information regarding new contact skills and management areas.

Guidelines. The teacher involved in innovative practices could be supported by information and guidelines in a number of areas. First, the teacher would be more involved in grass-roots research activities and curriculum development in collaboration with his/her students. These are in respect of the immediate environment and issues associated with it. Guidelines regarding research procedures and on how research procedures and findings could be utilized for instruction are to be provided. Secondly, teachers are likely to be involved increasingly in group work at school. This approach needs proper management for results. Guidelines on procedures need to be provided. Thirdly, guidelines concerning continuous monitoring and assessment of pupils would be particularly useful especially when monitoring is being linked to specific remedial, enrichment and pastoral attention.

Chapter Seven

CONCLUSION

The primary goal of APEID is to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development and improving the quality of life of the people in Member States.

In reflecting on the Forum, participants identified two overarching themes underlying activities in the Region:

THEME ONE: An integrated approach is being applied to the development and implementation of new models of secondary education.

THEME TWO: The new models are emerging through a process of debate and consensus – seeking within each country on the distinctive mission of secondary education.

The integrated approach is being adopted at all levels of development, implementation and evaluation. The type of secondary education needed for the future is seen as seeking to develop the capacity to fulfill multiple roles in society, with these roles being integrated and focused on a conception of the educated person and the good society. The design of new models also employs an integrated systems approach – consideration being given to changes needed not just in objectives and curriculum, but structures, buildings, teaching, assessment and linkages with the community.

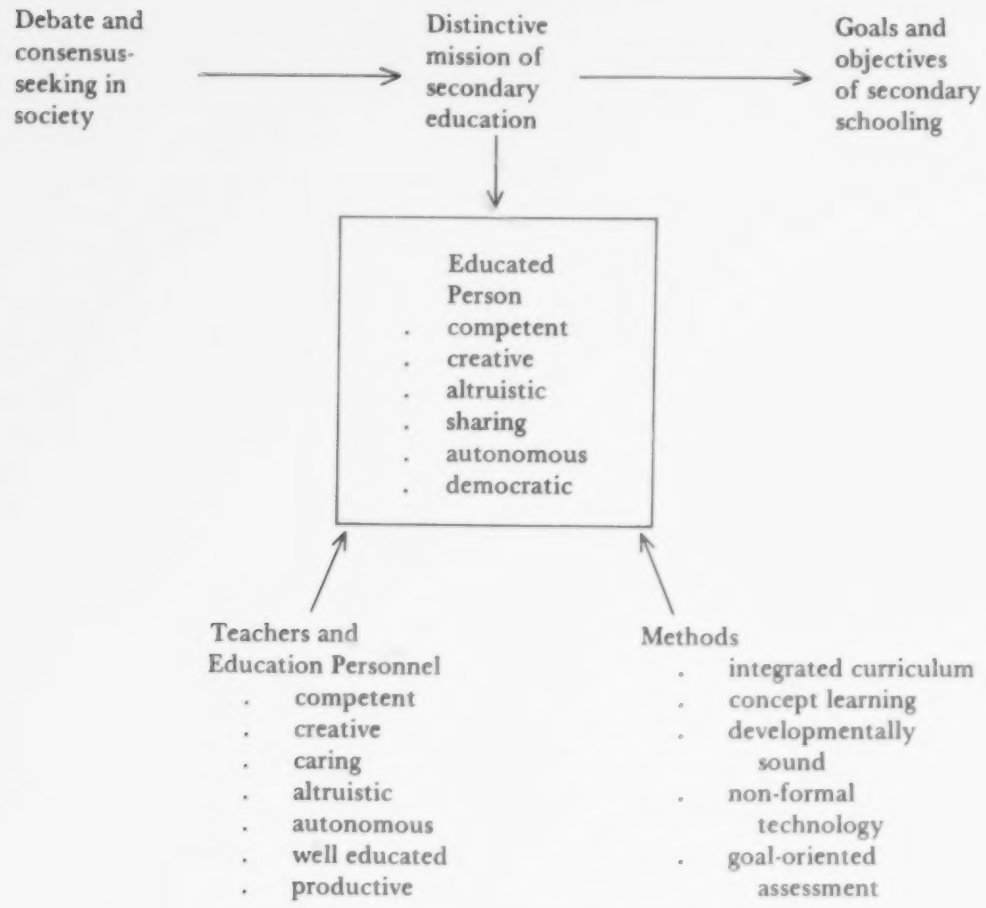
Integrated rather than subject compartmentalised curricula are being developed. Teaching involves not just the transmission of abstracted information on the one hand and skills training on the other, but the integrated development of knowledge, skills and utilization of knowledge in the community. Similarly assessment is beginning to focus on the development of broad concepts and future-oriented competences rather than the traditional accumulation of isolated pieces of information.

The key issue to be addressed is what type of secondary education is needed to create the well-educated person; the qualities needed for a unified, productive society; and the growth of a humane, caring, global society.

Answering this question is not seen as the sole responsibility of some expert. It is more a process of co-operative negiotation leading to the development of a new accord as to the distinctive purpose of secondary education in society. It is recognised that secondary education serves multiple functions, but that it must have clear goals which relate to an agreed position about the educated person, teacher and educational personnel congruent with this position, and methods which evidence and experience indicate are the most effective ways of achieving goals.

The conceptualization is presented in Fig. 5.

Figure 5. Towards an educated person



Areas in which debate and consensus seeking have been, and for which answers continue to be, sought include:

1. clarification of the characteristics of the educated person – creative problem solving, productive, caring, self-reliant, respect for others, co-operative;

2. clarification of the quality of life and type of society and global village sought: nationhood, unity in diversity, universal brotherhood, democratic, modern yet respecting human values, egalitarian, quality of environment; and

3. clarification of contradictions of modern life as they relate to secondary education – the nature of work as paid employment and conceptions of ways of contributing to society: role of the state, family and other social institutions in providing education and socialization; strategies for removing inequities and injustice; restoration of the link between reproduction of knowledge and skills and productive work.

Future and follow-up activities

It has been envisaged by APEID that in the near future workshops may be organized at the Region and at the national level for various categories of educational personnel and groups involved in the development, implementation and utilization of new models of secondary education.

The organization of Regional and national workshops to review programmes made in developing new models of secondary education would involve:—

a) exchange of training materials relevant to preservice education and inservice programmes for the training teachers;

b) development of a network of institutions and agencies, regional and national; and

c) further development of exemplar materials aimed at meeting the needs of the region.

Tentative proposals for workshops were made in their personal capacity by participants from Australia, India, Malaysia, New Zealand, Papua New Guinea, Philippines, Republic of Korea and Thailand as summarised in Table 3.

Table 3. Tentative plans of national Workshops

Country	*Theme of workshop*	*Target groups*	*Organising agency*	*Workshop duration*	*Dates*
AUSTRALIA	Integration of new models of secondary education	State and Commonwealth Committees of Inquiry, Key personnel implementing programmes. Curriculum specialists	Australian National Commission for Unesco/Flinders University School of Education	7 days	August 1986
INDIA	1. Inter-institutional co-operation and networking of Schools.	Heads of Secondary Schools	NIEPA New Delhi	10 days	September 1986
	2. Vocationalisation of secondary education perspectives and plans	Heads of Secondary Schools	NIEPA/NCERT New Delhi	10 days	November 1986
MALAYSIA	Computer literacy at Secondary level	Curriculum Development Staff and Key personnel	Curriculum Development Centre	7 days	March/April 1986
NEW ZEALAND	New trends in secondary education- conceptual models for Asia and the Pacific	Secondary school principals, inspectors of schools teachers college lecturers, university professors, Department of Education officials from the curriculum and schools divisions and member of the Ministerial committee to review the Curriculum for schools.	Department of Education/N.Z. Commission for Unesco	5 days followed by six 1 day courses.	April 1986
PAPUA NEW GUINEA	Future trends in secondary education	Provincial High School Board members (FAS General, Senior Curriculum Officers) 4 Inspectors 4 Head teachers 2 Teachers College lecturers 1 University professor 3 Division Staff 1 Teacher Association Rep.	Ministry of Education.	4 days	May 1986

Table 3. *(continued)*

Country	*Theme of workshop*	*Target groups*	*Organising agency*	*Workshop duration*	*Dates*
PHILIPPINES	Towards new directions in secondary education	13 Chiefs of Secondary education at regional level. 50 selected Assist. Sup. for secondary schools.	. Ministry of Education Culture and Sport . APEID . MECS Regional Officers. . Institutions of Higher Learning includeing Teacher Training Institutions.	5 days	August 1986
REPUBLIC OF KOREA	Identification of Changes needed in Secondary Education Curriculum for 1990s	M.O.E. Officials, researchers, Scholars, teachers	Korean Educational Development Institute	3 days	April 1986
THAILAND	1. Vocationalisation of Secondary Education (Perspective and Implementation Plans)	Vocational educators, High School principals and supervisors	Department of General Education	7 days	1986
	2. Upgrading the quality of secondary schools	Department officials, supervisors and principals	Department of General Education	5 days	1986

Annex I

AGENDA

1. Opening of the Forum.
2. Consideration of Agenda and the Provincial Schedule of Work.
3. Presentation and discussion on papers on national policies and plans in respect of structural and substantive changes in secondary education.
4. Review of studies, made in the light of the recommendation of the Task Force, and development of conceptual framework of new models of secondary education.
5. Development of alternative objectives of secondary education, identification of issues related to secondary education and identification of innovative practices and growth points.
6. Exploration of curricula, training strategies, monitoring and evaluation initiatives, and available instructional materials for implementing and renewal of new models.
7. Suggestions for follow-up activities: preparation of country plans.
8. Consideration and adoption of the draft report of the Forum.

Annex II

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Unesco Regional office for Education in Asia and the pacific	Dr H.K. Paik Specialist in Training Educational personnel (ACEID)

Annex III

List of Documents

ROEAP – 85/APEID. FNTP/INF. 1	–	General Information Paper
ROEAP – 85/APEID. FNTP/1	–	Agenda
ROEAP – 85/APEID. FNTP/2	–	Provisional Schedule of Work
ROEAP – 85/APEID. FNTP/3	–	New Trends and Processes in Secondary Education in Australia, by Professor COLIN N. POWER
ROEAP – 85/APEID. FNTP/4	–	Changing Patterns of Secondary Education, by Professor PHILLIP W. HUGHES
ROEAP – 85/APEID. FNTP/5	–	Diversification and Relevance in the Australian Secondary School Curriculum: A review of issues and development, by DR A.S. RYAN
ROEAP – 85/APEID. FNTP/6	–	Vocationalisation of the Secondary School Curriculum: Comments on Issues raised by the World Bank, by DR A.S. RYAN
ROEAP – 85/APEID. FNTP/7	–	Secondary Education – A future perspective, by DR R.P. SINGHAL
ROEAP – 85/APEID. FNTP/8	–	Diversification and vocation-alisation of Secondary Education in India – A new perspective, by DR R.P. SINGHAL
ROEAP – 85/APEID. FNTP/9	–	New Trends and Processes of Secondary Education, by M.P. PRABHAKAR
ROEAP – 85/APEID. FNTP/10	–	Studies on New Models of Secondary Education, Ministry of Education, Malaysia
ROEAP – 85/APEID. ENTP/11	–	Remodelling New Zealand Secondary Schols: A Systems Approach to Educational Change, by DR COLIN L. KNIGHT

ROEAP – 85/APEID. FNTP/12 – An Analysis of Secondary School Community Extension Project in Papua New Guinea, Ministry of Education, Papua New Guinea

ROEAP – 85/APEID. FNTP/13 – A Review and Analysis of educational needs at the secondary level in Papua New Guinea, Education Research Unit, University of Papua New Guinea

ROEAP – 85/APEID. FNTP/14 – Towards New Directions in Secondary Education, by DR PACITA ANDRES

ROEAP - 85/APEID. FNTP/15 – New Models of Secondary Education: The Philippine Experience, by DR ESPERANZA A. GONZALEZ

ROEAP – 85/APEID. FNTP/16 – The 1989 Secondary Education Curriculum: A Proposal, by DR ESPERANZA A. GONZALEZ

ROEAP – 85/APEID. FNTP/17 – Development of new models of Secondary Education, Republic of Korea, by DR KWAK, BYONG-SUN

ROEAP – 85/APEID. FNTP/18 – In Search for an alternative model of secondary education of Korea, by YONG-DUG LEE, BYONG-SUN KWAK, and JEOUNG-KUN LEE

ROEAP – 85/APEID. FNTP/19 – Trends and Processes of Secondary Education in Thailand, by DR SAWAT UDOMPOCH

ROEAP – 85/APEID. FNTP/20 – A Review of the Historical Development, Recent and Current Programmes, and Future Models for a Diversified Curriculum of Secondary Education in Thailand, by The Supervisory Unit, Department of General Education – Thailand

ROEAP – 85/APEID. FNTP/21 – Thai-Alberta Co-operative Assessment Project Concerning Rural Secondary Schools 1978-1980, by Department of General Education, Thailand and Faculty of Education, the University of Alberta, Edmonton, Canada, March 1980

ROEAP – 85/APEID. FNTP/22 – Evaluation Study of the Diversified Secondary Schools Project, by a Joint

Committee Consisting of Representatives from the Ministry of Education, the Bureau of Budget, the Office of National Education Commission and the Office of National Economic and Social Development Board, Government of Thailand, Bangkok, 1981

ROEAP – 85/APEID. FNTP/23 – New Models of Secondary Education – Vocational Training and Technical Education in Secondary General Education in the People's Republic of China, Central Institute for Educational Research, Beijing, China

Annex IV

INNOVATIVE PRACTICES AND EXPERIMENTS IN THE PARTICIPATING COUNTRIES

Innovative practices have been introduced by each country unsolved issues. Most innovations relate to linking schools and their communities, and to providing work experience for students at school. Examples from some of the countries in the Region are presented below.

1. The Secondary School Community Extension Project (SSCEP) in Papua New Guinea.

This project arose from the issue of monitoring a balance between theory and practice in secondary education. It was also a response to the concern that traditional high school education was absenting students from their communities because the education being provided was for white collar jobs. This meant that if students were not selected for further training or employment they were left with little useful practical or technical skills and little feeling for village life.

SSCEP has four objectives:

- teach integrated academic skills to students through practical, village-oriented projects while maintaining standards;
- learn skills of project planning and implementation so that students who returned to villages had the basis for self-employment;
- promote an interest in village problems while helping students to aquire skills of problem solving, decision-making, initiative and responsibility; and
- broaden the educational experience through work done away from formal school and to sensitize students to the needs of rural development.

The SSCEP curriculum model was carefully designed to translate the aims and philosophy of the project into practice. The model has four components which are:

(a) *Core Subjects*

Core subject skills are incorporated and applied within projects (e.g. writing letters for information about pig disease for English).

(b) *Core Project*

Schools select core projects (pig, cattle, trade stores etc) depending on student and community needs, availability of resources and managerial expertise.

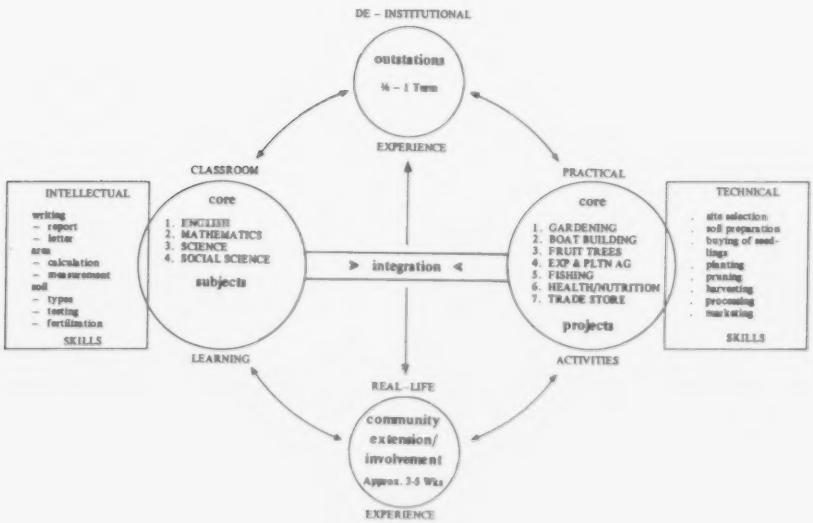
(c) *Outstations*

Outstations are self-contained field centres built by students from bush materials or developed from unused buildings. Students spend from a month to a term in outstations where they follow a classroom and a practical programme designed around the environment.

(d) *Community Extension*

Students are divided and sent to nearby villages to live and work for 4-6 weeks in grade 10. The villagers supervise the students and teachers visit the students from time to time to monitor students progress.

The learning model of S.S.C.E.P.



SSCEP students do the same Grade 10 Examination with other non SSCEP students. Evaluation of the project have concluded that SSCEP students have maintained their academic standards. These results again showed clearly SSCEP was not to be seen as providing a second-rate education, and students were not going to miss out on training and employment opportunities. The SSCEP project is an example of an innovation devised to establish more direct relationships between school learnings and community application.

Work experience education in the Philippines

In the Philippines, high school students are exposed to both academic and generalized vocational training and, to insure that the linkage between education for culture and education for work is forged, a subject called Work Experience has been added to the curriculum.

Envisioned as a laboratory course for all subject areas, Work Experience in the Philippines involves work-oriented activities aimed at developing desirable work habits and skills, self-sufficiency and productivity. The course is organized around six areas: Food, Clothing, Shelter, Health and Sanitation, Arts, Culture and Recreation, and Services. Each one of these areas features project models which are direct or indirect application of the knowledge acquired in the subject areas of the curriculum. A project may not solely be applying the concepts in English but also Science and Technology or Mathematics.

Furthermore, it may be home-based and/or community-based. This provides for flexible application of what one has learned in school. Knowing that work does not merely start and end in school, the home and the community become accessible venue that give the youth wider opportunities for self-productivity.

But, what is going to be the nature of the work component of the secondary education programme? Will it be basic vocational education or specific skills training?

Sound educational practice requires an understanding of the distinction between basic vocational education and technical/vocational training.

Elements	*Basic Vocational Education*	*Tech. Voc. Training*
Target	All students regardless of interest and aptitudes	Selected – those who have the interests, aptitudes and abilities
Purpose	Development of basic knowledge, skills, attitudes and values toward work	Employment, development of knowledge, skills and values for specific treades or occupation
Skills Proficiency Level	General and basic to everyday training	Advanced and specific according to employment status
Content	Broad fields, basic tools, processes, general information	Occupations, advanced tools, machines, equipment

There are those who maintain that technical vocational education is not the responsibility of the secondary education sector but that of the post-secondary sector, inasmuch as the students (13-16 years old) are still too young, psychologically, to decide on what occupation to pursue. On the other hand, preparing students for specific occupations, would be functional for the students . . . they would already have the needed competencies, and employers, therefore would not need to retrain them.

Transeducation in New Zealand

During the 1980s there has been a substantial increase in unemployment in New Zealand and young people with low academic qualifications, Maori and Island youth and young women have been greatly at wish to unemployment. Secondary schools responded by introducing transition programmes for those for students. Transition education, through a blend of in-school courses and community-based work experience aimed to provide young people with relevant knowledge understanding and skills to assist them to move confidently into the adult world.

Courses may include some elements of regular school programmes such as communications skills and numeracy. Considerable attention is given to daily living skills which include handling money, independent living and citizenship.

Gradually transition education was seen as an important component of secondary education for all students as a bridge to help them more from a state of relative dependence to a state of independence and interdependence.

The most recent innovation in this area has been the development by these high schools working co-operatively of Transeducation model. The components of the transeducation curriculum are listed under the acronym W.I.S.E. where

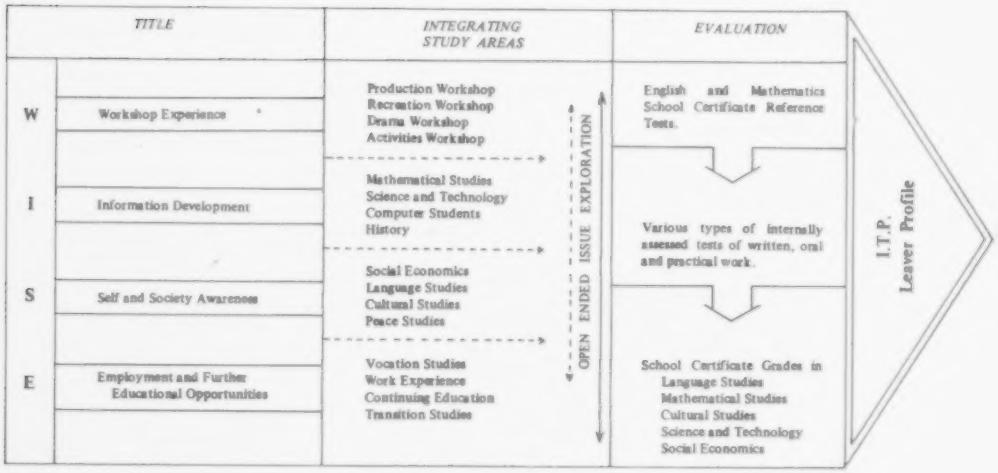
W = Workshop Experience

I = Information development

S = Self and Society Awareness

E = Employment and Further Educational Opportunities.

The Transeducation Model



Form 5 (Grade 10) students may opt to take this programme, a full years course, as an alternative to the traditional School Certificate Course.

The course will comprise modules of work on a theme which integrates the four study areas under each of the curriculum components. Students and teachers will decide democratically the themes and content areas for study. They will compile a document stating the rationale for the module, the aims to be achieved and a list of the skills to be acquired. Some of the modules will be done at school and some out in the community as a form of work experience.

For each curriculum module the class is divided into groups of mixed ability. Each group addresses one aspect of each step of the project.

At the completion of each step all groups come together to synthesize their insights and acquired knowledge. Facilitators and students keep notes of what is learned.

Assessment is undertaken on the basis of group and individual work. Where individuals contribute to a group project, overall evaluation is on a group basis. However, individuals may be nominated by the teacher or the group for particular comment. Assessment always involves detailed feedback to groups and individuals. Where there are basic skills that students have not been able to master, groups and individuals are encouraged to devote more time to these skills.

Transeducation is based on two assumptions about students ability to learn. Firstly, the pedagogical organisation of the programme is consistent with research findings which suggests that students learn effectively from their peers. Secondly, it is assumed that whatever students' measured scholastic achievements, they all have unique skills, background knowledge and insights that can be effectively used within group work.

The Integrated Transeducation Programme (I.T.P.) is based on a democratic approach to curriculum development on two levels. Firstly, as an open-ended, issues exploration curriculum, parents, students, teachers and members of the wider community have considerable in-put into what is learned; and secondly, it separates questions of the student "assessment" (was the work done before?) from questions of course "evaluation" (was the work worth doing?).

As such, it is necessary to evaluate where the course fails the students, as much as it is to assess where the student fails to successfully complete the course.

Essential to the understanding of the integrated curriculum is the recognition that forms of knowledge (demains or structures within mathematics, science, social science etc) and the necessary skills development (e.g. numeracy, literacy, social skills, judgement) need to cut across traditional subject boundaries, if students are to develop a wholistic understanding of their place in the world. In a subject-oriented curriculum, students are left to make their own connections as to how the material they learn is relevant to the world. The Transeducation approach removes the barriers of subject-oriented learning, and approaches the curriculum on a thematic, issues-exploration basis. In this way students may be able to grasp the connections between subject areas through which we understand the world.

The transeducation programme aims to develop two major categories of skills which are assumed to be the most important in the future:

1. Technological skills – which include those considered necessary for any employment were technology is used. These include computational and literacy skills and a basic ability to manipulate hardware and software.

2. Communication Skills – in order to participate fully in a democratic life it is essential that an individual has the ability to understand another's point of view and to be able to advance his/her own in a fluent and coherent way. The curriculum would be concerned, therefore, to develop a social interaction programme designed to enhance communication skills.

The integrated transeducation programme is an attempt to combat inequity by providing compensatory education. First, it attacks the problem of low self-esteem and lack of confidence by giving students an improtant measure of power over the nature, direction and pacd of the curriculum. This is done through the exercise of their democratic rights with respect to curriculum design and development. The point here is that low self-esteem comes about because these students are alienated and relatively powerless within the mainstream school system. The programme aims to develop a sense of self-efficacy and power in these students by

enabling them to make decisions which have a fundamental bearing on their lives. Secondly, trans-education is integrated curriculum which demonstrates the relevance of learning to students' everyday lives. Middle and upper class students accept the intrinsic worth of academic subjects. But working class students often regard academic subjects as being irrelevant because they cannot see what bearing they have on their lives. When academic subjects are taught in a compartmentalised way it is difficult for any student to see what practical relevance they have for living.

By integrating "practical" and "academic" work and by making the connections between subjects explicit through the study of major problems which confront us, transeducation overcomes the problem of "relevance" for working class students. Thirdly, transeducation regards the understanding and manipulation of new technology as essential to the education of working class youths, not only so that they may enter the market place with the relevant skills but also so that they may have an appreciation of the effects of new technology on their lives and how to control it.

The Community Secondary School (CSS) Project – Thailand

Since 1977 the State in Thailand has expectect secondary school not just to give academic, vocational and rural education to students but to educate the public and to provide public service for the community. The Community Secondary School Project which has been operating since 1979 was aimed to implementing these objectives by bringing about equal educational opportunity to the rural areas, developing educational standards in rural schools and making the school the community resource centre.

The project encomposses 42 rural secondary schools which have received, through the World Bank, additional buildings, furniture and equipment as well as in-service training for key personnel.

The mission of the community school concept is to provide educational services for out-of-school youth and adults and to serve the community. Many of the schools are offering adult education classes both during and after school hours.

The following article by Ruang Chareonchai, [1] describes how successful the project has been in providing public service for the community (one of three roles expected of Thai secondary schools).

The variety of ways in which the community secondary schools are helping their communities is very great. There seem to be three broad areas of service – agriculture, health, and communications. Under the community school concept, the school takes the initiative in offering to help the community. Once it has demonstrated that it is willing to help, a closer and more reciprocal relationship emerges between school and community. Examples in the various fields follow.

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[1] *International Journal of Educational Development*, 1984, 4(2), 137-144.

In agriculture, school staff have helped with the vaccination of cattle, pigs and chickens, and with the neutering of pigs and cattle. Schools have sponsored fish ponds with new varieties of fish and better methods of raising fish. Some of these ponds are situated at the school, some in the villages. A number of the schools have undertaken to raise pigs, chickens, ducks, and geese, in addition to raising fish. Many schools have demonstration plots for vegetables grown at the school and some have home projects supervised by the agriculture teacher. Quite a number of schools have rice paddies, and encourage farmers to grown better strains of rice. The 'bank' concept for rice, pigs, chickens, ducks is working well in some schools; this involves the school initiating the raising of good strains of rice or animals, distributing these to the villagers, then receiving a share of the natural increase back from the villagers in due course.

In southern Thailand, one school is involved with a rubber improvement project of a similar nature, and one, a cattle improvement plan. Close co-operation with the Ministry of Agriculture exists.

In the field of health, schools are assisting with primary health care, including immunizations and nutrition instruction, as well as with instruction in maintaining clean water supplies. Some schools assist with the distribution of family planning information. Several have started a 'medical bank', a cabinet of simple medicines held either at the school or in the villages. Villagers can buy these medicines at very little more than cost price, thus creating a revolving fund for the stocking of the bank. In all these health service thrusts, schools co-operate with the Ministry of Public Health and 'Village Volunteers' of that Ministry. Co-operation is also encouraged with non-government agencies working in the field of public health.

In the area of communications, schools have erected newspaper-reading centres in some villages, and encourage the people to use the school library also. One school is trying to develop an ingenious plan for installing a public address system in each of the nearby villages, operated from the school. In this way, important announcements, affecting the total community could be quickly relayed to the villages by the school.

Appropriate technology is an emphasis of the community schools, which encourage agriculturists and others to consider the use of machines and processes which can be manufactured in the local district and repaired there, without waiting for parts from some distant place – sometimes waiting in vain for parts which are not available. Examples of appropriate technology in which the community schools have become involved include wind-driven pumps using a chain of endless buckets from stream or canal to the nearby school fields. Under way are some experiments on man-powered pumps of different kinds for irrigating fields. Another thrust is for bio-gas generators demonstrated and used by the school for the cheap production of natural gas and the improvement of sanitation in the villages.

But the community school concept is not one-way. The communities have helped the schools greatly through the early building of temporary or permanent classrooms, and providing work-experience placements for some students in practical

arts. In one school, village women act as instructors for a handicrafts programme in the production of plastic mats for sale by both school and village.

The secondary school as a resource centre in India

In India the assumption is made that a secondary school of tomorrow has to serve as a nodal point and a resource centre for the primary and elementary schools in the neighbourhood. The trend so far has been that junior schools serve as 'feeder' institutions for the senior school; there is only one-way upward traffic. The secondary school is now beginning to perform the role of a 'parent' school and offer its services to the so-called feeder schools. The traditional concept and thinking has, therefore, been modified and there is two-way traffic between the secondary school and the primary/elementary schools.

The secondary school serves as a central school of a school complex (consisting of about 10 to 15 primary and upper primary schools situated in close proximity). In that capacity it has to share its resources, both physical and human, with the member-schools of the complex. It has also to share its innovations and experiments with them. In countries where a large proportion of primary schools consists of singleteacher schools (in India, they constitute nearly 36 per cent of the total number of primary schools), the institution of school complex may come very handy to provide immediate substitutes temporarily whenever required and check absenteeism among teachers and freequent closure of such schools.

A secondary school, in this way, has to monitor, supervise, and counsel the junior schools and be an agent of bringing about internal efficiency of the system as well as of raising the quality of teaching learning of the member-schools, which in turn would help to raise its own quality and performance. This system of school complexes is developing not only in India but in Thailand/the Philippines and Sri Lanka.

The Asia and Pacific Programme of Educational Innovation for Development (APEID) has as its primary goal to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development, thereby improving the quality of life of the people in the Member States.

All projects and activities within the framework of APEID are designed, developed and implemented co-operatively by the participating Member States through over one hundred national centres which they have associated for this purpose with APEID.

The 24 Member States participating in APEID are Afghanistan, Australia, Bangladesh, China, Fiji, India, Indonesia, Iran, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Samoa, Socialist Republic of Viet Nam, Sri Lanka, Thailand, Tonga and Turkey.

Each country has set up a National Development Group (NDG) to identify and support educational innovations for development within the country and facilitate exchange between countries.

The Asian Centre of Educational Innovation for Development (ACEID), an integral part of the Unesco Regional Office for Education in Asia and the Pacific in Bangkok, co-ordinates the activities under APEID and assists the Associated Centres (AC) in carrying them out.

The programme areas under which the APEID activities are organized during the third cycle (1982-1986) are:

1. Universalization of education: access to education at first level by both formal and non-formal means;
2. Education for promotion of scientific and technological; competence and creativity;
3. Education and work;
4. Education and rural development;
5. Educational technology with stress on mass media and low-cost instructional materials;
6. Professional support services and training of educational personnel;
7. Co-operative studies and innovative projects of research and research-based experimentation related to educational development.